Financial Analysts Journal

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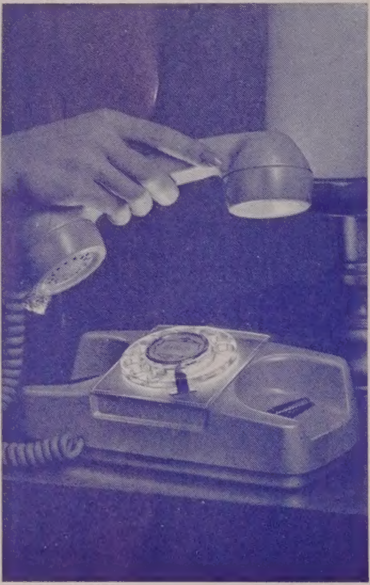
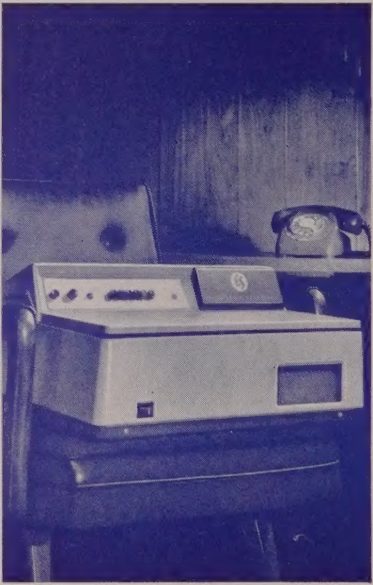
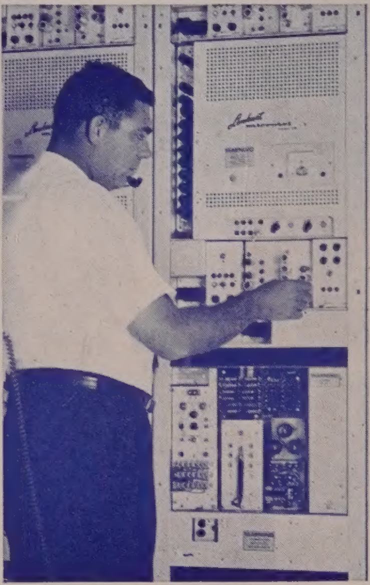
Airlines: A Bright Future, by G. Howard Conklin, Dean Witter & Company; Price Inflation, Monetary Inflation and Stock Prices, second chapter of 1962 book on money and credit, by A. Hamilton Bolton; Japanese Investments: New Field for Americans, by Gazuko Yoshino, Chairman of the Board of Governors, Tokyo Stock Exchange. Also the postponed article on Changing Trends in the Paper Industry by Karl R. Bendetsen, president, Champion Paper and Fibre Company.

IN HUNDREDS OF DIFFERENT WAYS
GENERAL TELEPHONE & ELECTRONICS
IS CREATING A NEW WORLD OF COMMUNICATIONS

In no field of industry are more exciting developments taking place today than in communications. And as the nation's need for varied and advanced communications grows, we are growing too in our capacity to meet the demand. Here are but three more new ways we are working to supply the present and meet the future with the finest communications equipment and service.







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Celanese synthetic lubricants for the space age

For many years, Celanese has been supplying industry with fire-resistant hydraulic fluids and compressor lubricants.

Trademarked "Cellulube," these synthetic materials contribute to the safe operation of die casting machines and other plant equipment subject to high temperature environments. They are also used by the U.S. Navy to activate aircraft carrier mechanisms and missile launching equipment in Polaris type nuclear submarines.

Utilizing the same background technology, Celanese introduced a group of heat-resistant lubricants to meet the severe conditions encountered in jet engine operation—where ambient engine temperatures are far greater than those found in piston type aircraft. The development of "Cellutherms," as they are called, was a major breakthrough in the chemistry of synthetic lubricants for super-sonic military and commercial aircraft. Joining in this project was the Air Force Research and Development Command.

To date, at least nine Governments of the free world are now either adopting or testing Cellutherms for their military and commercial jet aircraft. And, to keep pace with future needs for new and improved space age lubricants, Celanese is continuing with basic exploratory work, both self-supporting and under Government contract.

The opportunities for expansion in this one area of chemistry are exciting. In the automotive field, for example, Celanese now manufactures and supplies oil additives, fuel additives and related products. Most recent is a synthetic transmission fluid-lubricant for use in the *transaxle*—a combination transmission and differential unit. Located in the rear of the car, it eliminates the hump in the front seat floor. Currently, two 1962 models coming out of Detroit are equipped with this space-saving improvement.

Latest development is a group of synthetic grinding and cutting oils for machining the ultra-hard nickel-chrome alloys used by the aircraft, space and missile industries.

Cellulubes, Cellutherms and other fluids in this group are manufactured by Celanese with significant economies resulting from its basic position in raw material sources. Distribution in the United States is handled through the Celanese Chemical Company and in foreign countries through its export affiliates, Amcel Co., Inc. and Pan Amcel Co., Inc. The rights to manufacture Cellulubes in Great Britain are licensed to A. Boake-Roberts.

The bright future of these synthetic functional fluids is another example of the vast possibilities inherent in organic and polymer chemistry. Celanese Corporation of America, 522 Fifth Avenue, New York City. Cellulube® Cellutherm® Celanese®

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CHEMISTRY FOR THE MARKETS OF THE WORLD

Building for keeps . . .

America is a building nation. To help add new dimensions to our skyline, Anaconda works hand in hand with architects, engineers and fabricators of copper and copper alloys. The results are seen everywhere.

The majestic 38-story Seagram building at 375 Park Avenue in New York has curtain walls of extruded architectural bronze and Muntz Metal sheets. Those who enter the Basilica of St. Mary in Minneapolis pass through massive doors of bronze, accented with delicate porcelain enameling. In Denver, the new United States National Bank has a spiral stairway railing of red brass, doors of cast bronze, and entry walls, escalator and interior circular columns of handsome bronze mesh screening. These are but a few Anaconda applications. The list constantly grows.

The renaissance of bronze in the building arts is only part of the picture. Just as importantly, copper and brass are being used with increasing frequency to make private dwellings more comfortable, more efficient and more livable. For example, thousands of recently built homes utilize lighter, smoother, longer-lasting copper tubes, not only for water lines, but for waste, vent and drainage purposes. And, as always, solid brass and bronze hardware lends strength and beauty to homes everywhere—from the front door knobs to back door bolts.

You'll find Anaconda wherever men go about the business of living. In the home, the office, the school, hospital—everywhere you look, anywhere you go—brass and copper make things last longer, help make work lighter.

Through constant development of new copper sources, through research, through better products—in many ways, large and small—Anaconda continues to serve the nation's hundreds of industries and millions of individuals.

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Analysts Journal

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Financial Analysts vs. Financial Reporters

Elsewhere in this issue there are selected portions from an article originally published by the National Industrial Conference Board entitled "Management's Relations with Security Analysts and the Business Press." We asked permission to reprint it, *in toto,* but it develops that this is contrary to the policy of *The Conference Board's Business Record.* However, we believe that our excerpts are representative of the full report.

Now, this is a most interesting report, particularly so because 215 manufacturing companies in the United States participated in the survey. And in this survey, Security—Financial, the term being interchangeable—Analysts emerge with a somewhat "shinier coat of armor" than did business financial reporters, despite scars on the escutcheons of both.

We can't help wondering, after reading this article carefully, whether some of the corporate management didn't favor Analysts as compared with financial reporters by reason of so-called built-in advantages possessed by the former. For it is doubtless true that the great majority of Security Analysts have studied financial and economic data pertaining to an individual company before talking with its executives. And even when such studies have been all too superficial, such superficiality allows a greater range of information relative to the company and its industry compared with that possessed by too many financial reporters.

The latter all too frequently are limited by deadlines, or if they work for large city dailies or press associations, by a series of deadlines, which in many instances does not result in—shall we say charitably—a professional and workmanlike job. Security Analysts, on the other hand, seldom have to face similar deadlines which are limiting factors to thorough financial analysis.

Speaking from actual experience (this editorial being the combined views of the editor—a Financial Analyst, *per se*—and the managing editor whose background has been business and financial reporting), we know that in many instances corporate management tends to be much more wary in talking with the press than with Security Analysts. But, not being psychoanalysts, we can't explain why. And in the course of being "wary" not as much information is divulged to the business-financial reporters.

Perhaps corporate officials feel that there are certain aspects of their company operations they do not wish to see published in other than economic journals, or in individual company analyses made available by the research departments of financial organizations.

Again, we're not psychoanalysts, so who knows! And therein lies a subject matter that would make an excellent article for some future issue of the Financial Analysts Journal.

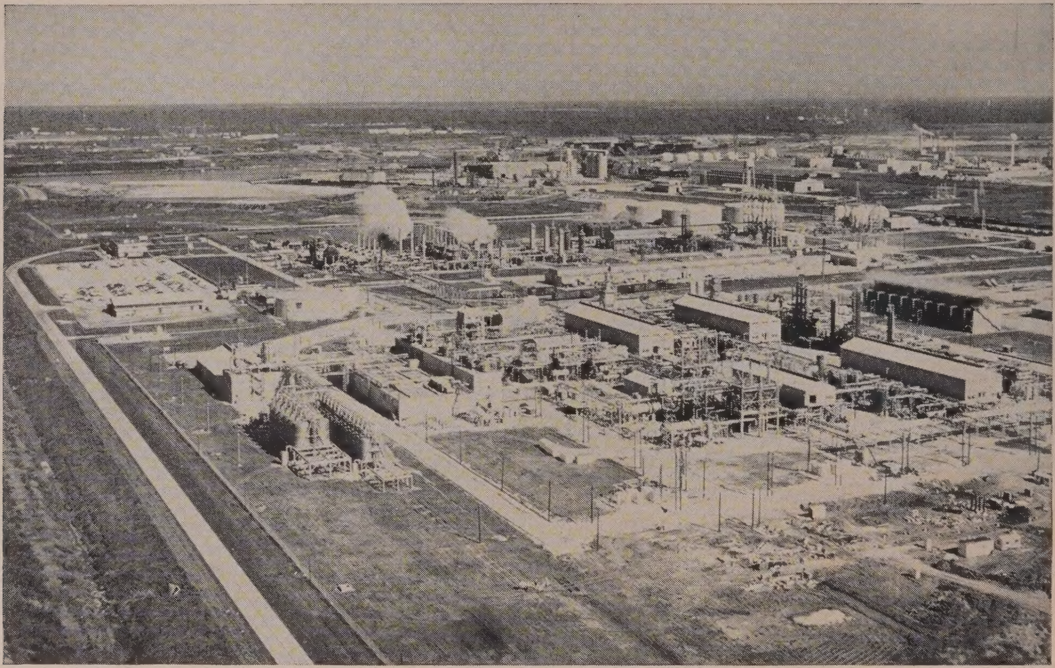
Welcome Aboard: Omaha-Lincoln Society

In this issue there's an article by Edson L. Bridges of *The Omaha-Lincoln Society of Financial Analysts.* And it's an excellent article which should find wide interest among our member and non-member subscribers alike.

It's natural that we publish more articles from the larger societies—the law of averages. And we'll reiterate our desire to open our columns to Analysts from the numerically smaller Financial Analysts Societies. Those of us in New York are well aware that there are "gold nuggets" north, south and west of the Hudson River. And at the moment thinking of newest of our 28 Societies: Atlanta, Jacksonville and Toledo.

Looking Ahead With Phillips Petroleum . . .

Factors of Petrochemical Profits



Phillips petrochemical complex at Adams Terminal on the Houston Ship Channel.

Petrochemicals can be profitable—*but only to a company that is aware of the dangerous gap between failure and success in this demanding field and is qualified to bridge it.* In petrochemicals one has to run just to keep up with the race. Since there is no proved formula for petrochemical success, it can be attained only by pounding relentlessly at each of many vital factors. Here are some of the critical ingredients needed to make petrochemicals pay off:

. . . Dependable adequate supplies of lighter hydrocarbons—most versatile petrochemical materials.

. . . A scientific team deeply rooted in the kind of research which produces valuable new chemical processes and products.

. . . Experience in selecting chemical projects according to the promise of return to stockholders, rather than upon whim or impulse.

. . . Constant awareness that in this intensely competitive business even slight shortcomings in quality will bar a product from the market.

. . . A wide variety of non-petrochemical facilities which affords opportunities to shift materials into alternate uses when seasonal and other cyclical fluctuations, so characteristic of the chemical business, necessitate changes.

. . . Sales development people, experienced in research, who can nurse new products into the market until they can stand on their own feet, joined by skilled technologists who initially and continuously can help solve customers' applications problems at company sales service laboratories.

. . . A marketing organization that identifies, originates, and develops new opportunities for customers' end-products, alerts companies when a genuine need for some new product is uncovered.

How well is Phillips prepared to meet these critical requirements for petrochemical success?

It is the nation's leading producer of natural gas liquids, from which come the choice chemical raw materials. Since the infancy of petrochemicals, Phillips scientists and engineers have been exploring the nature of petroleum-derived chemicals, and seeking the best ways to make useful products from them. The company's varied facilities are knit tightly into its petrochemical projects. Over the years we have developed capable teams of technologists and salesmen dedicated to creating and sustaining wide customer demand for Phillips chemical products. And from top to bottom, Phillips people in petrochemicals are acutely aware of the complexities and inherent risks of the business, and are constantly searching for ways to overcome them.

Today Phillips is the petroleum industry's leading manufacturer of nitrogen fertilizers and plastics—its top supplier of raw materials to the rubber industry—a major manufacturer of materials for synthetic fibers—large producer of ethylene, the raw material for polyethylene, and of high-purity benzene, another important chemical building block—principal manufacturer of motor reference fuels used in plants and laboratories around the world—supplier of numerous specialty chemicals for uses in many fields.

This parade of Phillips petrochemicals has met the test of stiff competition from newcomers, from improved products from old-timers, and from swiftly changing consumer desires. As some petrochemicals drop from the parade in the future, others will fill their places—and still others will be added—another reason for "looking ahead with Phillips Petroleum".

PHILLIPS 66

PHILLIPS PETROLEUM COMPANY, Bartlesville, Oklahoma

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From the President's Desk

With the passing of a leisurely summer, Federation activities went into full swing, September 16, with a meeting of the Council of *The Institute of Chartered Financial Analysts* in Charlottesville, Virginia. All members were present with exception of one. Dr. C. Stewart Sheppard, Director of the Institute, and Dr. Charles C. Abbott, Dean of the Business School, discussed in detail suggested curriculums and procedures. It was apparent that all council members were impressed with their complete grasp of the objectives of this program.

Work is progressing on schedule and it is still hoped that all preliminary details will have been accomplished so that the first examinations can be given in the Fall of 1962. A preliminary brochure was presented for approval in principle, which was granted and subject to review by legal counsel. This document should be available shortly after the turn of the year.

Application forms for admission into the CFA will be available from the Secretary of your local society. Completed forms will be processed by the local society Executive Committee as to accuracy of information and then forwarded to the Institute of Chartered Financial Analysts at Charlottesville for further screening and control by the Institute office. This may become a problem of logistics and it seems prudent to exercise physical control of processing at this point. In the case of nonmembers the Federation Secretary will process applications initially before forwarding them to the Institute's office.

There will be separate application forms for each examination. Candidates for the CFA professional designation must be regular members of a local society to be eligible to take Parts II and III of the examination. Candidates who are qualified to waive Examination I must

(continued on next page)

Institute of Chartered Financial Analysts

A meeting of the Executive Council of *The Institute of Chartered Financial Analysts* was held at Charlottesville, Va., September 16, 1961.

Dr. Charles C. Abbott, Dean of the Graduate School of Business of the University of Virginia, and Marshall Ketchum, Professor of Finance, University of Chicago, attended as members of the Educational Advisory Committee. Douglas A. Hayes, Professor of Finance, University of Michigan, has accepted appointment as member of the Educational Advisory Committee. Messrs. Abbott, Ketchum and Hayes are deeply interested in the Institute's aims and objectives. Their cooperation will represent a significant contribution from which we can all benefit.

The all-day meeting of the Executive Council was most fruitful. After the necessary business, legal and financial matters were discussed and decided upon, the meeting was turned over to Dr. C. Stewart Sheppard for discussion of academic procedures.

Dr. Sheppard and his research assistant, Dr. Pierce Lumpkin, presented a draft of proposed procedures for *The Institute of Chartered Financial Analysts.* As a result of a complete discussion, Dr. Sheppard is now in a position to prepare a printed brochure describing the Institute, the nature of the examinations, how they may be taken, and how to prepare for them.

The brochure is expected to be ready for distribution early in 1962. Dr. Sheppard and Dr. Lumpkin are also engaged in preparing suggested reading material which will be most helpful in preparing analysts for examinations which we expect to have ready for the fall of 1962.

The Executive Council is pleased with the progress already made in shaping up the Institute's program and the vigorous and considered manner in which Dr. Sheppard plans to conduct the Institute.

—A. MOYER KULP, *Chairman*

apply for Examination II by December 1965, and those who are entitled to waive Examinations I and II must apply for Examination III by the same date. Other points of eligibility and time limits between examinations will be described in complete detail in the brochure.

It is contemplated breaking down Examination I into two parts consisting of four hours each. The second part will be offered initially in the Spring of 1963 and it may be taken before the completion of Part I.

Examination II consists of a thesis requirement designed to test the candidates ability to conduct independent and original research. These will be scheduled for submission in April of each year. Application procedure for this examination is in two stages; namely, (a) candidate should present a suggested topic and a brief outline with his application form; and (b) final approval of the topic will be given after the candidate submits a detailed outline together with a bibliography of proposed source materials.

Examination III is a test of decision making ability of candidates. This will consist of a case study and freedom of choice essay questions of a broad nature in the field of specialization. The case study can be done in lieu of several essay questions.

The Institute was authorized to proceed with development of study guides which we believe will be extremely helpful to candidates. A bibliography of research material will be available to candidates shortly after application forms are distributed.

This brief outline of the Institute program may raise many questions in the minds of Financial Analysts; however, it is believed that the descriptive brochure will provide most of the answers.

At the recent Executive Committee meeting in Rochester a resolution was adopted that requests all Federation directors to be automatically members of their respective society Executive Committee. These Financial Analysts can be especially helpful to newer members of local Executive Committees. Also, it was felt that a separate meeting of Federation Vice Presidents on an annual basis will be particularly helpful, and we shall work toward setting this up at a convenient location with a complete agenda of appropriate subjects. Of course, it would be hoped that each Society would be represented.

Following this meeting, the Federation's Executive Committee met with the officers of *The Rochester Society of Investment Analysts.* Then David D. Williams, your Executive Vice-President and I visited with Financial Analysts Societies in Toronto, Cleveland, Indianapolis and Cincinnati. George M. Hansen, the Federation's Executive Secretary and Treasurer, has already visited the new Society in Toledo: *The Financial Analysts of Toledo.*

The next Federation Executive Committee meeting is scheduled for Atlanta, in December, with members of the new *Atlanta Society of Security Analysts.*

George Stevenson Kemp, Jr.

Newport News Shipbuilding and Dry Dock Company

Quarterly Statement of Billings, Estimated Unbilled Balance of Major Contracts and Number of Employees

	Three Fiscal Months Ended		Nine Fiscal Months Ended	
	September 25, 1961	September 26, 1960	September 25, 1961	September 26, 1960
Billings during the period from shipbuilding, ship conversions and repairs, hydraulic turbines and other work	$62,139,249	$43,080,716	$151,264,674	$141,164,666
	At September 25, 1961		At September 26, 1960	
Estimated balance of major contracts unbilled at the close of the period	$543,662,115		$307,144,062	
Equivalent number of employees, on a 40-hour basis, working during the last full work-week of the period	21,333		15,258	

The Company reports income from long-term shipbuilding contracts on the percentage-of-completion basis; such income for any period will therefore vary from the billings on the contracts. Contract billings and estimated unbilled balances are subject to possible adjustments resulting from statutory and contractual provisions.

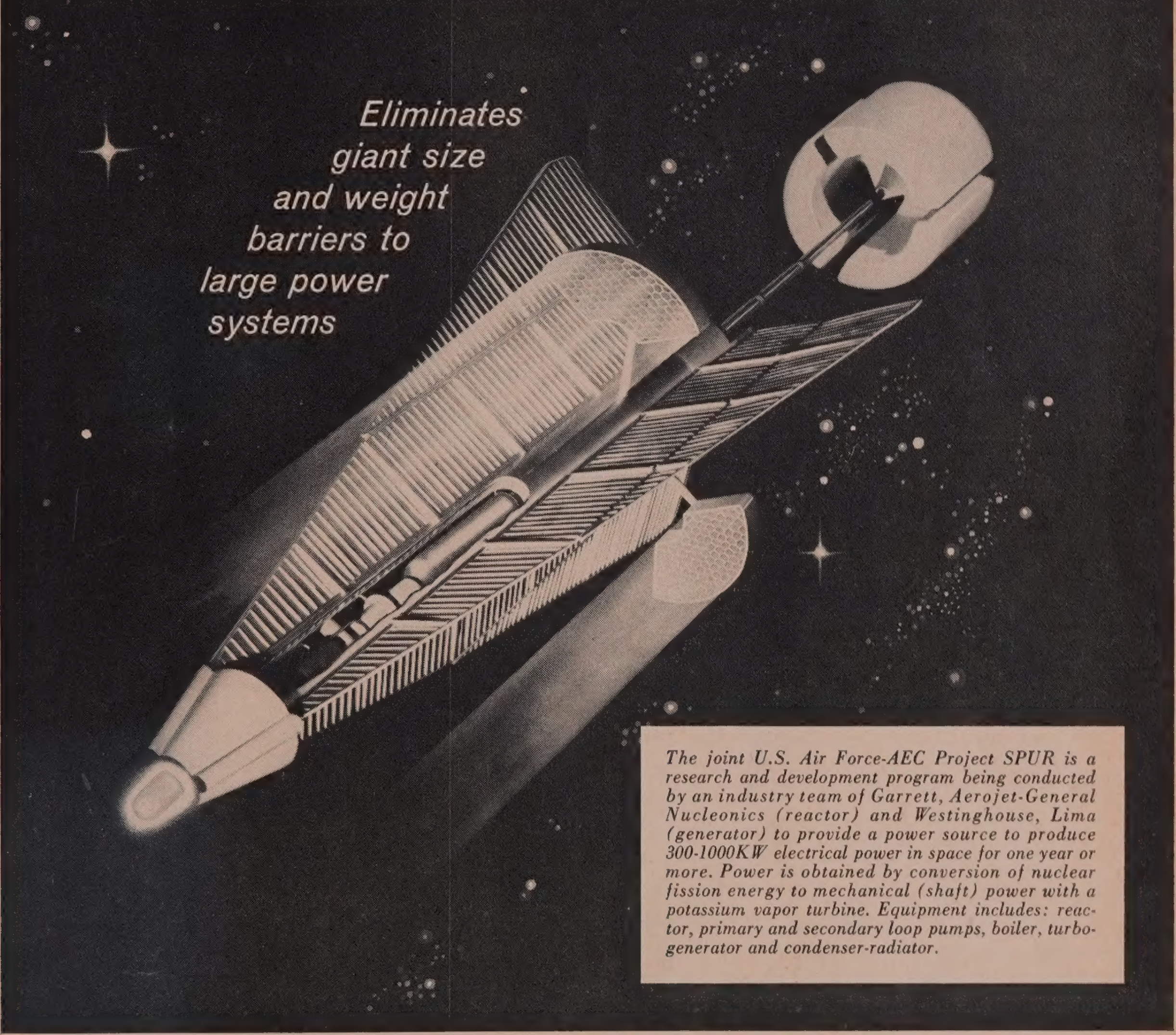
By Order of the Board of Directors

October 25, 1961

R. I. FLETCHER, *Financial Vice President*

GARRETT-U.S. AIR FORCE 'SPUR'

..one answer to America's future power needs in space



Eliminates giant size and weight barriers to large power systems

The joint U.S. Air Force-AEC Project SPUR is a research and development program being conducted by an industry team of Garrett, Aerojet-General Nucleonics (reactor) and Westinghouse, Lima (generator) to provide a power source to produce 300-1000KW electrical power in space for one year or more. Power is obtained by conversion of nuclear fission energy to mechanical (shaft) power with a potassium vapor turbine. Equipment includes: reactor, primary and secondary loop pumps, boiler, turbo-generator and condenser-radiator.

Long lead time is essential to the development of large nuclear space power systems. Present methods of power generation would require an impractical heat rejection surface nearly the size of a football field for a power output of one megawatt—power which will be needed for critical space missions already in the planning stage.

Garrett's AiResearch Divisions have now completed the initial SPUR design studies and proved the project's feasibility to supply continuous accessory power and low thrust electrical propulsion in space for long periods of time.

Cutting projected 1 MW power systems to 1/10th the size and 1/5th the weight of present power systems under development will be possible because of SPUR's capability to operate at higher temperatures, thereby sharply reducing the required radiator area.

Garrett has been working with the Air Force and the Atomic Energy Commission on SPUR as the prime contractor for more than one year and has more than five years of experience in space nuclear power development. Also an industry leader in high speed rotating machinery, heat transfer equipment, metallurgy and accessory power systems, the company is developing design solutions for SPUR in these critical component system areas.

GARRETT

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What is the Bell System?

The Bell System is cables and radio relay and laboratories and manufacturing plants and local operating companies and millions of telephones in every part of the country.

The Bell System is people . . . hundreds of thousands of employees and more than two million men and women who have invested their savings in the business.

It is more than that. **The Bell System is an idea.**

It is an idea that starts with the policy of providing you with the best possible communications services at the lowest possible price.

But desire is not enough. Bright dreams and high hopes need to be brought to earth and made to work.

You could have all the equipment and still not have the service you know today.

You could have all the separate parts of the Bell System and not have the benefits of all those parts fitted together in a nationwide whole.

It's the time-proved combination of research, manufacturing and operations in one organization—with close teamwork between all three—that results in good service, low cost, and constant improvements in the scope and usefulness of your telephone.

No matter whether it is one of the many tasks of everyday operation—or the special skills needed to invent the Transistor or develop communication by satellites—the Bell System has the will and the way to get it done.

And a spirit of courtesy and service that has come to be a most important part of the Bell System idea.

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A Year End Review of the 1961 Economy

by Edson L. Bridges

In 1961, GENERAL BUSINESS ACTIVITIES in the United States commenced with industrial production in a declining trend and unemployment on the increase. The nation's fourth post World War II economic recession was in progress. The recession proved to be short lived, and a sharp recovery from the February low point to a new high in production was accomplished in only five months.

The 1960-1961 downward trend in the economy proved to be the least severe recession of the last 15 years as measured by the changes which occurred in the Federal Reserve Board's Index of Industrial Production. This fact is illustrated in *Table I*, which summarizes the duration and intensity of the declines in production from the peaks of the post World War II economic expansion periods to the troughs, or low points, of the recessions which followed.

Table I

Recent Economic Recessions

Recession Period	Duration in Months	Decline in Index of Ind. Prod.
1948-1949	12	8.4%
1953-1954	8	10.2
1957-1958	14	14.5
1960-1961	13	8.0

Source: U. S. Department of Commerce, Survey of Current Business.

Since the 1960-1961 recession appears to have ended, businessmen, economists, and investors are focusing their attention upon the possible magnitude and duration of the current upward trend in business activity. The purpose of this study is to comment on significant developments or trends in the 1961 economy; to classify these elements as positive or negative forces on the course of business; and to form conclusions about the general economic environment which lies ahead.[1]

FAVORABLE DEVELOPMENTS

A substantially enlarged investment in inventories was one of the strongest forces behind the 1961 economic recovery. Calculated at annual rates, the gain in total business inventories was $6.5 billion in the April-June Quarter—after allowing for the fact that inventory liquidation was $4.0 billion in the January-March Quarter. A relatively new U. S. Department of Commerce forecasting technique, which renders results with an acceptable degree of accuracy, estimates the gain in inventory investment was running at a $4.0 billion annual rate in the last six months of 1961.

A $4-5 billion annual rate of increase in inventories should be maintained throughout the early months of 1962 in order to support the anticipated expansion in consumer and industrial spending. War-scare buying; materials shortages from the possible imposition of production controls; fears of another steel strike in 1962; or anticipations of price increases could become motivations for a greatly expanded inventory build-up over the next 12 months. One or more of these latent forces could constitute a particularly dynamic short term stimulus to the economy.

GOVERNMENT SPENDING

Federal Government. The annual rate for total expenditures for national defense was $48.7 billion in the Second Quarter of 1961, up $3.0 billion or 7% from the annual rate of the last three months of 1960. Congress recently approved spending measures for defense, welfare, and public works which promise to accelerate the 1960-1961 pace of government spending. If past experience is a guide, the impact of these programs will be evidenced by higher economic activity 12 to 14 months after legislative action has been completed.

State and Local. Total spending by state and local governments for construction, wages and salaries, and other expenses approximated $47.3 billion in 1960. Reliable estimates place 1961's total expenditures at around $51 billion. Thus a gain of about $3.5-$3.7 billion is involved, and spending of this type should be 9% above 1960's level. The impact of increased state and local spending has been particularly significant in sustaining operations in the heavy construction industry.

Conclusion. In the aggregate, the constant rise in spending, by various governmental units, has probably created the largest single push behind the upward swing in the 1961 economy. Preliminary forecasts indicate that total Federal spending, exclusive of trust fund and other distributions outside the budget, can be expected to rise to the $86-$90 billion level in the 1961-1962 fiscal year. Total Federal expenditures were $81.5 billion in the fiscal year which ended June 30, 1961.

CONSUMER DURABLE GOODS

Purchases of automobiles and parts, appliances, furniture, and other consumer durable goods were running at a $41.8 billion annual rate in the Second Quarter of

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[1] This article is based upon information which was publicly available during September, 1961. Thus, the data reported on 1961 activity covers, depending upon the series of figures involved, only the first six to eight months of the year.

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1961. The previous high point of $45.3 billion for this type of spending occurred in the Second Quarter of 1960, and the lowest level of these expenditures in the 1960-1961 recession was $39.4 billion in the First Quarter of 1961. The rate of spending early in 1961 was sharply depressed by slow automobile sales, but by mid-1961 the daily selling rates for automobiles had been restored to levels about 10% behind 1960's pace. Except for automobiles and certain electric appliance groups, the general level of spending for other consumer durable goods was well maintained throughout the recession.

Surveys of consumer buying intentions report a probable gain in automobile and appliance sales in the 1961-1962 selling season, if individuals follow through on their contemplated courses of action. Assuming Gross National Product reaches the $550-$570 billion range during 1962, total consumer expenditures for durable goods should reach a range of $45-$48 billion—a substantial potential increase from 1961's average level of purchases.

INSTALLMENT CREDIT—SAVINGS

In the post World War II recession periods, the net repayments of installment loans have, on occasion, exceeded the extensions of new loans on a monthly basis. This same phenomenon was exhibited again in the first six months of 1961, when installment loan extensions dropped sharply in January, February, and April. The sustained high level of repayments and the deferred buying during the recession should place the consumer in the financial position to purchase the $45-$48 billions worth of durable goods forecast above.[2] In support of this conclusion, it is interesting to note that the total volume of installment loans outstanding in the years following a recession year jumped 27% in 1950; 21% in 1955; and 16% in 1959. In each of the three cases cited, the total volume of loans gained by more than $3 billion, and in the last two instances the gains were more than $5 billion.

In the First Quarter of 1961, the annual rate of personal savings was $28.3 billion compared to $23.7 in the First Quarter of 1960. A substantial gain in personal savings for 1961 was indicated by these figures. However, this comparison is somewhat misleading as to the probable size of the savings gain because the economic activity in the two periods involved were strikingly different. After allowing for an increasing rate of consumer saving during 1960, and a falling one in 1961, the total pool of savings in 1961 may rise about 4% over the previous year. Although this prospective gain is not spectacular, it does create additional dollar reserves to support consumer expenditures.

THE COMMERCIAL BANKING SYSTEM

The free reserves of the commercial banking system were approximately $600 million in mid-September, 1961. This high level of free reserves is the result of a Federal Reserve Board policy of substantial credit case which: (1) should permit the commercial banks to meet foreseeable business lending requirements; and (2) allow the U. S. Treasury to undertake the financing of new money without creating an undue strain on the short term money markets.

The $32.6 billion level of industrial and agricultural loans at commercial banks in mid-September, 1961 was slightly below the comparable 1960 figures—a surprising situation considering the 1961 economy was in an expansion phase. Despite the "bearish" overtones of this soft demand for loans, it was the consensus of the commercial banking community that the volume of outstanding loans would make major gains as the economic pace quickened both seasonally and secularly in the final months of 1961.

The changes in the demand deposits plus currency figures, often referred to as the money supply, are usually sensitive indicators of future courses of general business activity. An increasing money supply provides an improved ability to spend. The converse holds true when this series of data is falling. The demand deposits plus currency statistics began a favorable turn in the late Summer and Fall of 1960. Actual gains in the money supply, over the year preceding, were recorded in the First Quarter of 1961, and the money supply for the three months ending July 31, 1961 was up 1.7% from 1960's comparable figure. Thus, the money supply figures have been pointing towards an increase in economic activity for a considerable period of time.

CORPORATE CASH FLOW AND PROFITS

Table II summarizes the trends in corporate net income and depreciation charges for the 1955-1962 period, an interval in which many Financial Analysts contend U. S. economic activity has been stagnant. The cash flow figures in the table are calculated by adding depreciation to net income.

Table II

Corporate Cash Flow 1955-1962

	(in billions of dollars)			
Year	Corporate Net Income	Depreciation & Amort. Chgs.	Total Cash Flow	% Increase or (Decline) vs. Yr. Prec.
1962 E	24.5	25.9	50.4	7.2
1961 E	22.5	24.5	47.0	2.3
1960	22.8	23.1	45.9	0.6
1959	23.8	21.8	45.6	15.1
1958	19.1	20.5	39.6	(4.8)
1957	22.3	19.3	41.6	1.4
1956	23.5	17.5	41.0	5.3
1955	23.0	15.9	38.9	—

E—Bridges Investment Counsel Estimates.

Source: U. S. Department of Commerce, Survey of Current Business.

Between 1955 and 1960, corporate profits were unable to record any progress. Fortunately, non-cash charges expanded 45% to permit corporations to generate an 18% increase in cash flow, part of which could be reinvested in order to sustain long term growth.

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[2] The significance of a sustained net reduction of installment credit becomes particularly clear when the essentially short term nature of this type of financing is considered. If the typical maturity on a note is three years, there are many installment buyers who write down their debts by one-third in a given year. Thus, the people who paid off their loans can be ready to buy and borrow again in the next economic expansion period.

The estimated gain in cash flow for 1961 and 1962 should provide equity funds for an expanded rate of capital investment by corporate business. From a long term point of view, however, the growth in profits has been distinctly inadequate over the last six years, and, if capital expenditures are to rise significantly out of the $33-$37 billion range which has prevailed for the 1956-1961 period, a dramatic profits expansion may have to take place.

Capital Goods Spending

Expenditures for new plant and equipment by American industry proceeded at a $33.5 billion annual rate during this first six months of 1961. This level of spending was about 6% lower than the figures for the comparable period of the previous year. The "planned" rate of capital spending for the July-September Quarter of 1961 was estimated to be $34.8 billion by the Securities and Exchange Commission survey. Thus an upturn in capital spending appears to be in progress.

Research and Development Expenditures

Spending to improve existing products and to develop new ones has undergone some rather dramatic increases over the past decade—from $3.4 billion in 1960 to $13.0 billion in 1960. On the average, the Federal Government has sponsored or paid for approximately 60% of the total research effort involved. Nevertheless, private industry's own program now exceeds $5 billion annually, and the anticipated payoff from this investment in new products should be substantial in the years ahead.

Many companies with active research programs now derive more than 20% of their sales from products introduced within the last five years. The development of new products with good commercial potential can be one of the major defenses against the stagnation or maturity of the American economy. Thus, although research and development spending may reduce corporate profits after taxes each year, the future earnings from these commitments should be substantial, and the continued gain in research spending by private industry is a good omen.

Depending upon the accounting practice of an individual company, research and development expenditures may be: (1) written off in the year incurred or (2) capitalized and amortized later on. The immediate write-off of these costs is probably the more normal practice; thus reported earnings for many research oriented companies are penalized by these charges each year.

Consumer Attitudes

In spite of the Berlin, Cuba, Laos, and other United Nations crises, the American consumer failed to evidence any noticeable war-scare buying during the first nine months of 1961. Whether this situation could be regarded as calmness or apathy towards the Cold War remained to be seen; but, in any event, the public's willingness to avoid panic spending must be regarded as an inherent strength because the economy may be spared unusual stresses or demands which could force the Government to impose economic, fiscal, price, and tax controls. A system of central planning and regulation could impede the short and long term progress of the economy.

NEGATIVE TRENDS

Sluggish Demands

The tremendous post World War II economic expansion was fostered by a sizable pent-up demand for consumer durable goods, housing, and industrial plant and equipment. Between 1930 and 1945, a large volume of potential spending for these items was deferred as the result of the aftermath of the Great Depression and World War II. An abundance of inexpensive borrowed money helped to finance the long 1946-1957 boom. Peak rates of spending were reached for certain major product groupings in the following years: 1955—automobiles; 1957 — industrial plant and equipment; and 1959—residential construction.

Total dollar outlays for all consumer and industrial hard goods (including construction) were well sustained and rising, with cyclical interruptions, throughout the past 15 years. However, the rate of gain in the last five years slowed considerably when compared to results of earlier periods. In effect, the extraordinary demands or needs have been satisfied, and future growth in consumer and industrial capital expenditures will have to rely heavily upon the replacement of worn out or inefficient equipment, technological innovations, and the long term population expansion.

Specifically, demand for hard goods is sluggish in various sectors of the economy for the following reasons:

1. The spending emphasis of consumers has shifted towards non-durable goods and services away from durable goods. In the 1955-1959 period, total expenditures for services increased 33%, non-durable goods 18%, durable goods 10%.

2. Rough but reasonably reliable estimates indicated American industry was utilizing only 85% of plant capacity in the Summer of 1961, even though the Federal Reserve Board Index of Industrial Production reached record high ground. Low capacity utilization has been a particularly acute problem in such basic industries as aluminum, chemical, copper, paper, petroleum and steel where large plant investments are required to expand capacity. Consequently, a major increase in capital expenditures to expand productive capacity is not probable for several years. Capital spending is likely to be concentrated on projects which improve efficiency, and outlays in this category are expected to maintain the overall level of capital spending.

3. In spite of lower mortgage interest rates and a more plentiful supply of credit in 1961, housing starts have failed to demonstrate any important improvement

from 1960's depressed level of activity. The plentiful supply of rental units seems to be a large factor in the slow activity in new residential construction. Vacancy rates have been in the 8%-9% range throughout much of 1961 compared to a range of 3%-5% for rental vacancies in the late 1950's. In recent years, rental unit housing has paced the growth in residential construction activity in many areas of the country.

4. Persistent unemployment in large industrialized metropolitan areas—as a result of the 1959 steel strike, plant relocations, two recessions in three years, and automation—has undoubtedly cut down on the funds for discretionary spending in many significant groups of consumers.

PRICES—WAGE COSTS—PROFIT MARGINS

Many American businesses are faced with the problem of absorbing higher wage costs at a time when domestic and foreign competition is intensifying. Lower prices and higher costs are taking a two-fold bite out of potenital profits. In order to restore the "lost" profit contribution, management must increase productivity and expand the volume of products sold. In the 1950-1960 decade, statistics released by the Federal Reserve Board and the United States Department of Labor indicate that wage costs rose at a rate of 4.6% per year, while output per man hour advanced only 3.1%. The deficit between the cost and productivity gains was apparently covered by price increases; the Wholesale Price Index for Manufactured Goods rose at an average of 1.9% per year from 1950 to 1960. However, it is important to note that the gains in the Wholesale Price Index were only 1.0% in 1958, 1.0% in 1959, and 0.2% in 1960.

Three "straws in the wind" illustrate the seriousness of the problem of tight competition.

1. Despite a substantial increase in the steel industry's operating rate, price cuts were effected in certain grades of tin plate, structural, and stainless steels in the early Summer of 1961. All wage cost increases from the 1960-1962 labor contract had to be absorbed through September, 1961.

2. In September, 1961, General Motors agreed to a three year contract with the United Auto Workers union which was likely to cost GM an average 12 cents per hour per worker per year over the three year life of the contract. The contract incorporated some new supplemental unemployment benefits and other provisions were likely to encourage other labor unions to seek similar concessions from other employers. The general pattern of other negotiated wage settlements in the 1958-1961 period set increased wage costs on the low side of an 8-10 cents per hour range. Thus, the 1961 auto settlement was definitely one of the key developments on the national economic scene, since it was a major break-through in improved benefits for labor. Cost increases notwithstanding, General Motors did not raise prices on its 1962 model automobiles.

3. During the Spring and Summer of 1961, the aluminum industry recorded production gains over a depressed operating level earlier in the year. Nevertheless, Canadian and domestic competition forced a reduction in the price of pure aluminum ingot from 26 to 24 cents per pound in September, 1961. The aluminum companies absorbed all cost increases on their 1960-1962 wage agreements.

If the present economic expansion extends its advance, price increases could accompany the resulting higher utilization of productive capacity. However, the fact that product prices in some industries dropped, as prospects for better operations were in sight, is an indication of the severity of competitive problems in the early 1960's.

Unemployment

In August, 1961, approximately 6.9% of the civilian work force was "unemployed." The U. S. Department of Labor's definition of unemployment is broad enough to include persons seeking work who actually do not require employment to maintain their existence. Consequently, the unemployment problem is not as severe as the gross statistic would indicate. Nevertheless, there are some thorny real and prospective unemployment problems.

One form is the "structural" unemployment of persons who have been incapable of retraining themselves when old jobs are lost as the result of automation or plant relocations. In some cases, jobs paying less than the vacated ones have been available, but, in 1961, many unemployed persons preferred to collect an ever-increasing stream of unemployment benefits instead of working—according to authoritative newspaper reports. The established trend of rising labor costs will continue to force management to replace men with machines, and the resulting "hard core" of unemployed persons is not likely to shrink significantly over the long run, even if industrial activity rises sharply above recent levels, because the factors causing the unemployment are not being eliminated.

A second form of unemployment will come about as some 13 to 14 million new workers enter the labor force between 1960 and 1970. Total civilian employment has risen from 60 to 68 million jobs over the past decade—a gain of only 13%. The expected expansion in the total work force is likely to be 19% during the next ten years. Thus the rate of job creation must be accelerated, since recent historical rates of growth indicate the number of jobs to be created will fall far short of the required job opportunities. The record on the creation of new jobs is particularly unsatisfactory if the gain in government (Federal, State and Local) employment is considered. Public employees, exclusive of the military, increased by 2.5 million in the last decade, thus Government provided 30% of the total new jobs provided during the 10-year period. In 1960, total manufacturing employment had declined 7% from an all-time high set in 1953—a seven year period in which industrial production increased 24%.

The future rate of growth in employment opportunities is contingent upon tax policy to a large degree.

Lower taxes would permit higher corporate profits and faster capital formation which could be translated into a capability for business enterprises to reinvest to create jobs.

The Labor Monopolies

The industry-wide control exercised by many large trade unions may tend to stifle economic growth in the future. The growth in labor unions over the last 25 years has been beneficial due to the attainment of higher real wages and living standards for the blue collar worker. In effect, a vast middle class society has been created in the United States, and its buying power has and can be a strong economic force. The other economic powers of labor unions, resting primarily in the hands of a relatively small number of autocratic leaders, are not so benign: (1) many trade unions, acting alone, can shut down the entire economy for considerable lengths of time; (2) the push for higher wages is running counter to the need for lowering manufacturing costs to enable profitable and competitive pricing; and (3) the achievement of higher wages creates unemployment by stimulating the incentive for management to eliminate jobs.

In the auto, rail, and steel industries, total employment in 1960 was 25% or more below 1950 levels—largely as a result of union pressures for higher wages without the willingness to grant compensating increases in productivity.

Economic Environment Created by Government

With advent of the Kennedy Administration in January, 1961, a fundamental change was effected in the atmosphere in which the economy will operate. The eight years of Eisenhower's "status quo" attitude towards the economy have terminated. Federal spending increased to record peace time levels during Eisenhower's two terms. Nevertheless, Eisenhower was committed to the task of limiting the scope of Government interference in the economy, and this position is diametrically opposed to Mr. Kennedy's philosophy of government. The new Administration assumed office with an avowed objective of rekindling the growth of the national economy through Government action. Programs designed to increase business activity through Federal spending were submitted to and approved by the Congress, and a large flow of new money will be injected into the economy—with some beneficial effects.

However, these immediate economic gains will be achieved at the expense of a potential budgetary deficit for the 1961-1962 fiscal year of $5-$10 billion. The bad side effects of this deficit can be: (a) an increase in the cost of borrowed money which is already high by post World War II standards; (b) the destruction of other countries' confidence in the value of the dollar thereby creating the possibility of a renewed run on our nation's somewhat depleted gold supply; (c) the possibility of a renewed price inflation; and (d) the forced necessity to maintain Federal taxes at high levels to minimize the size of the Treasury's deficit—at a time when the long term growth of the economy requires permanent income tax cuts for individuals and corporations.

In general, the Kennedy appointments to cabinet, regulatory, and other administrative positions portend a more restrictive environment for business activity. Antitrust prosecution, which was active under the Eisenhower Administration, will be even more zealous under the new regime. Publicly regulated companies may find it more difficult to raise rates or to justify an increase in return on investment. The extension of public power and other enterprises in competition with private industry seems probable, if news reports on bureaucratic planning already under way prove to be correct.

In the field of labor relations, the Kennedy Administration will probably increase the practice of "codeterminism" whereby Government representatives formulate terms for collective bargaining settlements and tend to force agreement by moral suasion and other means. Although codeterminism should minimize work interruptions due to strikes, the Government may have to settle all major strike problems because the normal collective bargaining processes will tend to break down. The resulting terms of these settlements may turn out to be uneconomically high if compromises are formulated between existing wage levels and exorbitant new demands.

In summary, the events of 1961 strongly suggest that the Federal Government plans an even greater role in determining the course of the economy with the probability that the strong individuals and businesses in our society will have to subsidize the weak ones again. The Administration's failure to establish fiscal responsibility and to force Federal activities into a budget, embodying only the most vital expenditures for the national interest, is almost certain to lead to extra burdens on the economy and a reduced rate of long term growth.

CONCLUSIONS AND FORECASTS

Conclusions

The Kennedy Administration's response to the economic, fiscal and foreign policy problems facing the nation was to expand upon programs and methods employed by previous Administrations. In essence, the actions taken were politically acceptable solutions which worked in the past, and, in spite of the steady creep towards some forms of socialism over the past 30 years, the U. S. economy has achieved major growth. Thus, the many negative and intangible influences of Government actions and policies toward the economy must be considered erosive rather than destructive, and the concern expressed in the preceding section is primarily a dismay at the lost opportunities for economic growth.

The low prices, high costs, unemployment, and excess capacity problems are inextricably intertwined. An economic down turn aggravates each situation. Conversely, a rise in production activity should alleviate the acute conditions. Since an economic recovery is already in progress, the depressing effects of these various drags on the economy should be lessened temporarily. These economic problem areas cannot be ignored, but, at the moment, the growth of the economy should only be retarded rather than blocked by them.

The establishment of new high levels in Gross National Product, in the FRB Index of Industrial Production, and in total employment in 1961 should classify the year's economic accomplishments in the highly satisfactory category. To date, the behavior of the present economic cycle has demonstrated basic similarities to its three predecessors. As the recovery phase continues to unfold, the similarities to previous post World War II cycles will probably continue because the question of reforming corporate and personal income taxes will probably be deferred indefinitely. As stated earlier, a broad reduction in taxes should provide the best stimulus for short and long term economic growth.

Forecasts

Due to the broad and general scope of this study, the statistical forecasts will be confined to only two key economic indicators: the FRB Index of Industrial Production and Corporate Profits Before Taxes. Both series of data exhibit similar cyclical patterns; however, the swings in corporate profits are generally more volatile.

If the current economic recovery period follows a "typical" cyclical pattern, the major gain in industrial production and profits will have been recorded by the end of the First Quarter of 1962. The improvement over the 1961 lows should be on the order of 15%-20% for the Index of Industrial Production and 25%-35% for Corporate Profits Before Taxes.

The remainder of 1962 and the early part of 1963 should witness the "topping out" of the present expansion phase of the economy. The average annual growth rate during this period for the Index of Industrial Production should be in a 3%-5% range. Corporate Profits Before Taxes may actually decline somewhat after establishing a peak in the First or Second Quarter of 1962. Normally, the boom or expansion phase of the cycle lasts 24-36 months, thus the timing of the next recession should fall between February, 1963 and February, 1964. However, each successive post World War II expansion cycle has been shorter than the previous one. Consequently, the onset of the next recession could occur closer to the first date—possibly in 1962 if spending falters for plant equipment and consumer durable goods. These various working assumptions are summarized in *Table III*.

Table III

Forecasts of Production and Profits in 1962 and 1963

	Annual Average			
	1960	1961	1962	1963
FRB Index of Industrial Production (100 equals 1957)	108	109	119	117
Corporate Profits Before Taxes (in billions of dollars)	44	44	51	48

Source: Bridges Investment Counsel.

The following non-quantitative conclusions were also considered in compiling the forecast figures:

1. Inflation is not an immediate threat to the economy because of the excessive capacity and price competition which should continue to prevail in many industries despite the anticipated high level of industrial production. This conclusion is important because the possibility of raising income taxes to fight inflation would be minimized under these conditions. Similarly, the chances for price and wage controls are also lessened.

2. If controls and higher taxes were to become necessary, the Administration would probably propose their enactment in 1963 to avoid an election year controversy in 1962. Thus the chances are enhanced of avoiding these Governmental actions which would be deflationary in their impact upon the economy. Because of the high corporate and personal income tax rate, the measures to raise more Federal revenues may move into the sales and excise tax area.

3. Deficit financing by the U. S. Treasury is probable, and short term interest rates should rise as business and government compete for available funds. If the Federal Reserve Board does not severely restrict the free reserves position of the commercial banks, there is a good chance that interest rates will not rise to the extraordinarily high levels of the Fall of 1959, and the Winter of 1960. Preliminary indications suggest the Federal Reserve Board will probably continue a policy of credit ease so long as prices remain relatively stable. Such a policy should help to prolong the economic expansion period.

The 1963-1964 recession, if one develops, could be another mild, short setback. The large crop of World War II babies will be reaching marriageable age, and the rate of new family formations is expected to rise significantly about the middle of the 1960-1970 decade. The new families will be large buyers of durable goods, and a rejuvenation of the durable goods industries could take place at that time. Consequently, the prospective mid-1960 boom could record the sharpest advance of any of the economic cycles of the past 10 years.

APPROXIMATELY HALF of the Financial Analysts listed in The Financial Analysts Federation's 1961 Directory "are affiliated with security dealers, including brokers and underwriters. The remainder are employed by various types of firms, the principal types being commercial banks and insurance companies."

—*Opinion Research Corporation*

Due to unforeseen circumstances beyond his control, Karl R. Bendetsen, president of The Champion Paper and Fibre Company, was not able to complete his article in time for this issue. However, this article has been re-scheduled for our January-February publication—Editor.

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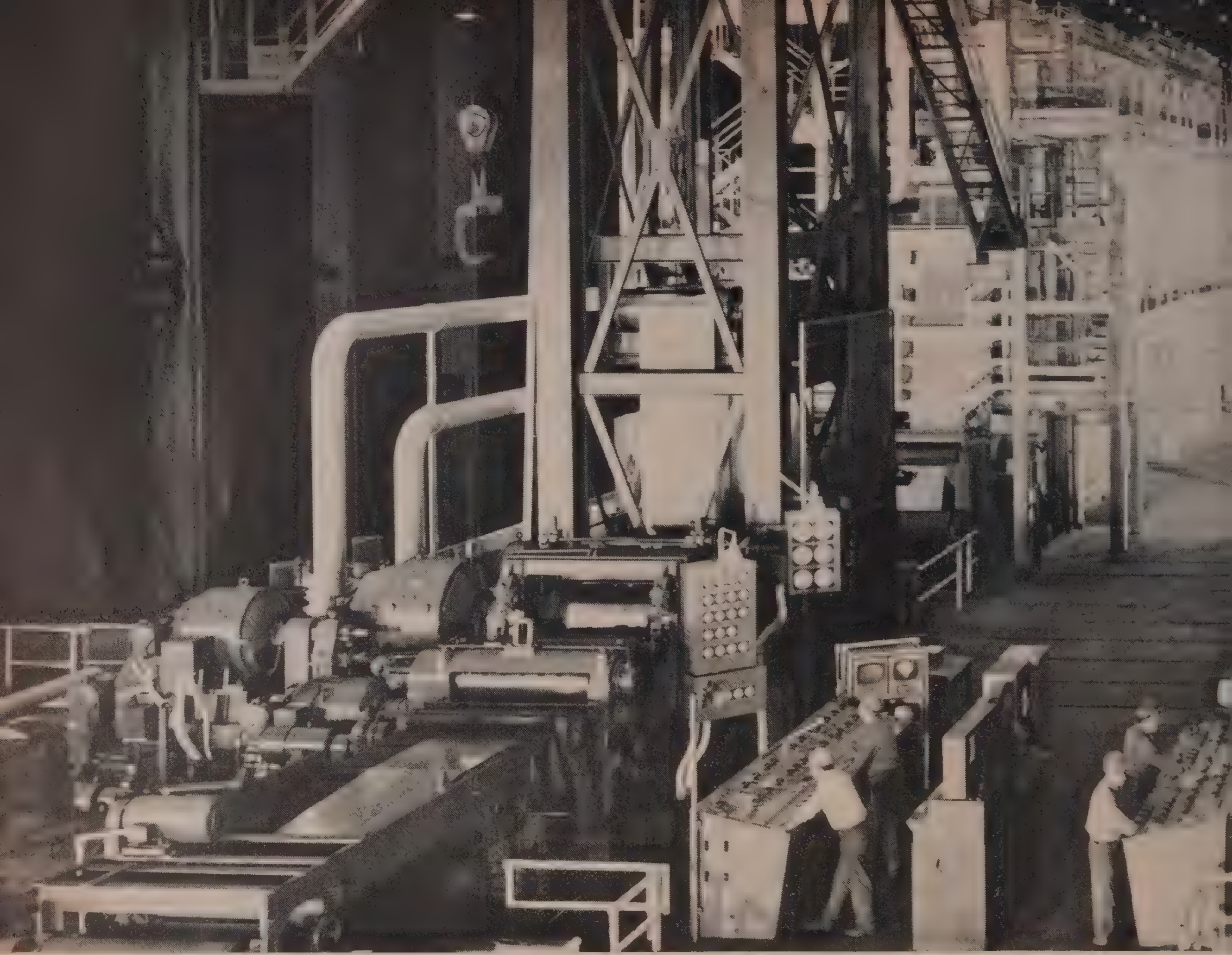

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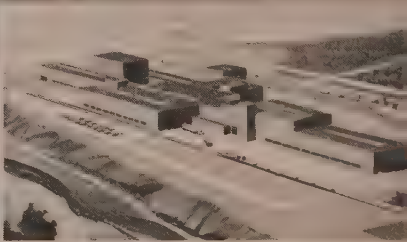

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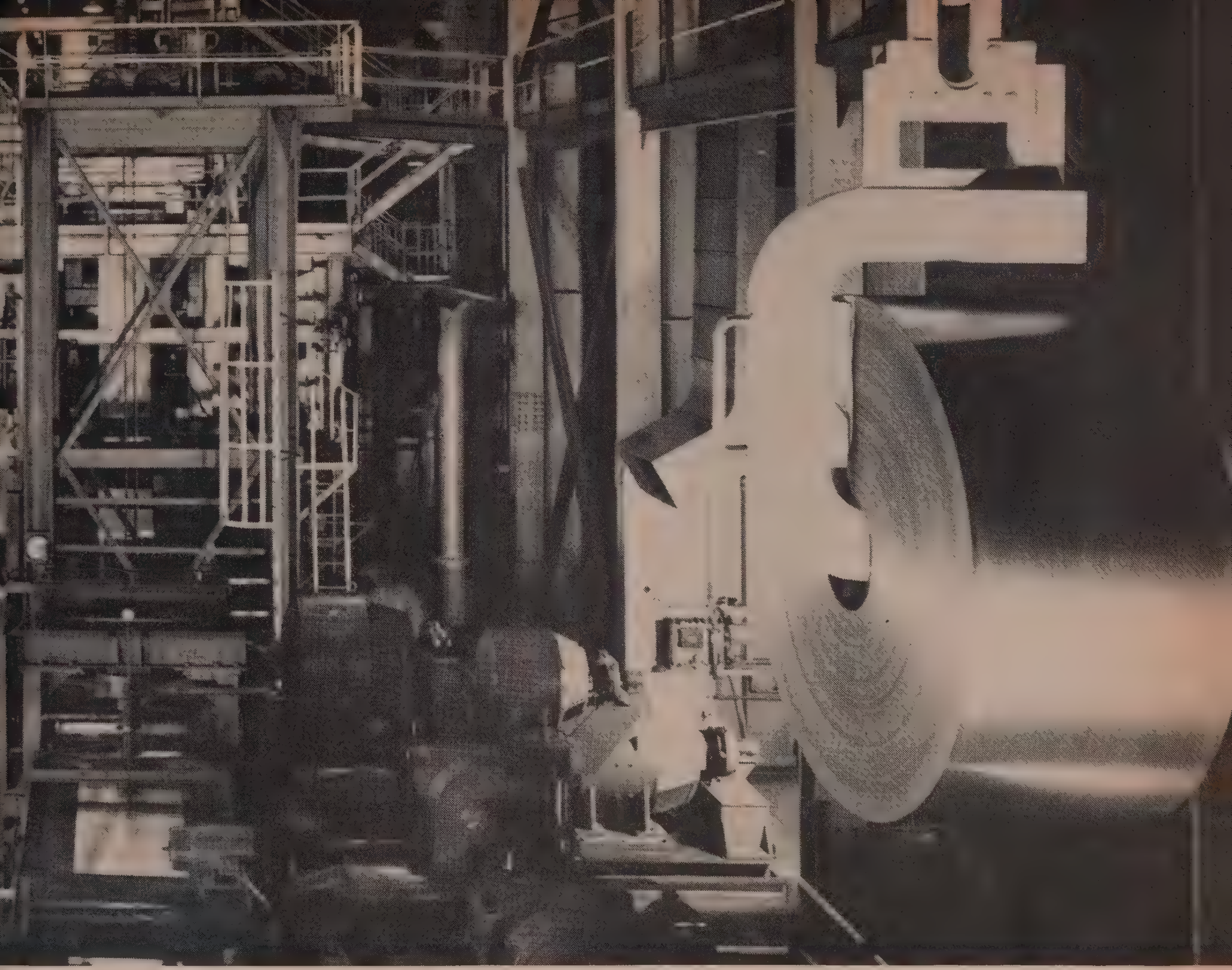

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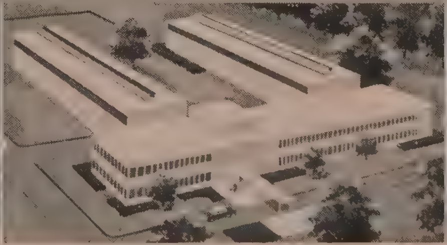

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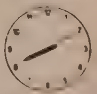
FLIGHT TIME—1 HR. 25 MIN.*

LV PARIS MIDNIGHT



AR. NEW YORK 8:10 PM
FLIGHT TIME—2 HRS. 10 MIN.*

Trisonic jets that would land you in Los Angeles 1½ hours earlier *than your take-off time in New York are feasible says a late Federal study. Douglas officials say they could be operational by the early 1970's.*

A 2100 mph civilian jet transport that would fly 13 miles high, cross the continent in one hour and thirty minutes*, and use present jet runways is on the drawing boards at Douglas.

Such an airplane is needed—says a recent Federal Aviation Agency study made with White House approval—to maintain U.S. leadership in commercial aviation. This is important because the export value of aircraft and parts in 1960 was $1.4 billion or 5.2% of total U.S. exports!

The study also notes that substantial government assistance would be needed to underwrite the $500 to $550 million estimated development costs.

Douglas believes that the estimated market of 200 to 300 Mach 3 aircraft would more than repay these development costs.

They are backing this belief with continuing studies based on 15 years experience with missiles, supersonic and hypersonic aircraft...to bring the trisonic civilian jet transport to reality at the earliest possible date.

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**Includes take-off and landing time.*

How U. S. Fire & Casualty Companies Invest

by Shelby Cullom Davis

WITHIN THE PAST FEW YEARS the financial officers of United States fire and casualty insurance companies have been emerging from the "dog house." This term is the North American counterpart to the philosopher Plato's "shadows." In other words they are beginning once more to bask in the sunlight of success.

New titles are even emerging. Where they used to be Assistant Secretaries or Secretaries, they are now Vice Presidents. One of my old friends, indeed, has recently been named Executive Vice President of our largest fire and casualty fleet. Another old friend, and friendly rival on the tennis courts, has just been made President of his Hartford-domiciled company. In fact among 68 top United States fire and casualty companies there are now four Presidents whose background is investment rather than insurance.

Happy days are beginning to be here again for insurance financial officers. But it was a long, tiresome wait in the "dog house"—more than two decades in fact. One has to go back more than a generation, to the latter part of the 1920's when the financial men were enthroned. Then, as now, their words commanded respect and their pronouncements took on the solemnity of oracles. They are now again sitting in positions of power and their words of wisdom are listened to as the soothsayers of old. It is almost as if these gentlemen had hearkened to the revolutionary words of 1848, "Throw off your chains."

Whence comes this change? Unhappily many of the financial officers of the 1930's and 1940's have not lived to see the renaissance. U. S. insurance companies are again regarded as financial, and not just insurance institutions, because finance has been good during the past decade. Interest rates have risen — which has pleased stockholders. One has to go back to the 1920's for a similar situation.

The investment officer today of a U. S. fire and casualty company faces a different world than his counterpart a generation or so ago. Perhaps that is too far to look back. Perhaps we should say 20 years ago—before the war. During this interval of two decades the relative attractiveness of bonds and stocks has undergone a veritable revolution.

Of course the investment officers of U. S. fire and casualty companies do not have an entirely free hand in investment. There are certain statutory requirements. For example, in New York State the law requires that reserve investments, unearned premium reserves, and loss reserves shall be invested in the highest grade bonds, Government bonds or state or municipal bonds bearing the highest ratings, or held in cash. There is no such restriction on surplus investments, however, whether the surplus is paid in or earned. It is therefore in the field of investment of surplus funds that the investment officer can exercise his best investment judgment. At the same time, in his choice of bond investments, he can also exercise discretion too.

One of our famous writers, now dead, (Gertrude Stein) used to say "A rose, is a rose, is a rose." And to some people a "bond, is a bond, is a bond." The last two decades have demonstrated that this is not true at all and the financial officers of U. S. fire and casualty companies have been in the forefront in acknowledging the difference.

A Bond Is Not Always a 'Bond'

Two decades ago the average fire and casualty insurance company portfolio contained largely Government bonds, some corporation bonds together with some preferred and common stocks. The more bonds the company owned, the stronger it was thought to be. Who did not recall the saying "Good as your bond." Those also were the halcyon days when, in the mid-1930's, the Federal corporation tax rate was 15%.

In the meantime our Federal budget has become inflated with the costs of one war, the emergence of the welfare state, and the maintenance of a vast military establishment. The corporate tax rate is now 52%. Consequently obligations of states and municipalities, whose interest is tax exempt—on which no Federal tax is paid—have become much more attractive to fire and casualty investment officers than Government bonds.

One of our outstanding companies, St. Paul Fire & Marine, which is located at St. Paul, Minnesota, long has had this policy of investing in state and municipal tax free obligations. St. Paul, in our Northwest, is a long way from Wall Street—and particularly was this true several generations ago. In their wisdom the directors of St. Paul Fire & Marine decided they might be outsmarted on corporate bonds or stocks by those "in the know," but that the obligations of states, and in particular small municipalities, which they knew intimately and which also carried a higher interest rate, would be good investments.

Shelby Cullom Davis, managing partner of Shelby Cullom Davis & Co., was formerly First Deputy Insurance Commissioner for the State of New York. Mr. Davis is a past president of The New York Society of Security Analysts and also of The Financial Analysts Federation.

Before the war St. Paul had more than 10 times as many tax exempt bonds as Government bonds whereas the reverse was true for most companies. Now most companies are investing, like St. Paul, buying tax exempt bonds much more heavily than Governments. Our Government bonds yield about the same, 3½%, as tax exempt bonds, but the interest on Government bonds is taxable at the full 52% rate paid by U. S. corporations, whereas the interest from tax exempt bonds is free of tax. The net retained by the insurance companies is thus approximately twice as much from tax exempt bonds as from Governments. That is one big difference in investing now compared with pre-war.

Fire and casualty companies have little interest today in corporation bonds, whether industrial or public utility or railroad. Formerly they were large holders of railroad bonds. But the interest from these corporate bonds is also fully taxable at the 52% corporate rate. Even though it is possible to obtain nearly 5% on corporate bonds today, tax exempt bonds yielding 3½% are still more attractive because their interest is fully tax exempt. That is another important change from pre-war.

The biggest change, however, is in the attitude towards common stocks. Formerly common stocks were regarded as speculative. And why not? From a high of 360 in the Dow Jones Industrial Average in 1929, the stock market dropped 90% to a low of 40 in the same average in 1932. In two and a half years this important average of prime industrial stocks lost 90% of its value. Other stocks lost even more. Is it any wonder that during the 1930's common stocks were regarded skeptically and the investment officers of fire and casualty companies, who had ridden the boom in the 1920's, were still lurking in their "dog houses."

Came World War II and the inflation which inevitably accompanies wars. U. S. Government bonds were pegged to yield only 2½%. The corporate tax rate was raised to 40% but in addition there were heavy excessive profit taxes. Bonds were poor investments during those times. Gradually the investment officers of fire and casualty companies began looking at common stocks again. They encountered resistance from their boards of directors, of course. But gradually more and more common stocks were bought. Their purchase has proved the salvation of many companies because surpluses have risen during rising markets even during the heavy underwriting losses of the past few years.

How much can a fire or casualty company invest in common stocks? Only surplus funds, it is true. But even here there is a wide discrepancy. And it goes back to the fundamentals of how much capital and surplus are needed to engage in the fire and casualty business.

'Insurance and Investment Exposure'

There are statutory requirements, of course, but I shall tell you what the companies are doing in actual practice. Experience varies widely. Each year we study in detail the underwriting and investment experience of 68 U. S. fire and casualty insurance companies. Our study is called "Insurance and Investment Exposure." They are the twins which determine insurance company investment. By "Insurance Exposure" is meant how much insurance business is being written, the spread of business and its profitability—all in relation to capital and surplus which serve as the fulcrum. And by "Investment Exposure" is meant how much of assets are exposed to the vagaries of market. Cash represents no exposure—it can always be used to pay losses. Government bonds, particularly short term maturities, represent the next lowest investment exposure. High grade state and municipal bonds, also in short maturities, represent the next least investment exposure.

Importance of Maturity Date

Maturity date of bonds is important. This was forcibly impressed upon me this summer when I visited England and heard that the famous "Daltons," British Government Bonds sold shortly after the war bearing a 2½% coupon, and named for the Minister of Finance at the time, were standing at 40 compared with the offering price of 100. These bonds have no due date; they are perpetuities. An agitation was then going on in the British press to put a due date on some of these bonds, say 5% to be drawn by lottery, and enable the poor savers to recoup their capital. So maturity is important indeed.

While high grade bonds are valued by statute at amortized value in insurance company statements rather than at market, it is the cash realized from market value which is available for the payment of losses. Common stocks, because they can fluctuate as we have seen (a 90% drop from 1929 to 1932) have been believed to represent the utmost in investment exposure.

It is the interplay of insurance and investment exposure that determine the investment policy of U. S. fire and casualty insurance companies. This is the hardest single fact for those in Wall Street, but not in the insurance business, to grasp. When the stock market is low may not be an opportune time for fire and casualty companies to invest in common stocks—if their insurance exposure happens to be high at that time. And by high we mean running a very high loss ratio or writing a great deal of business in relation to capital and surplus or a catastrophic hazard, etc. The insurance business governs the investing of U. S. fire and casualty insurance funds. This is fundamental.

When is insurance exposure high? In our studies we use capital and surplus as the basic tool, the fulcrum, by which premium volume and investments are measured. Among 68 leading insurance companies in America there is a range of no less than nine times in what management regards as proper premium volume to write in relation to capital and surplus. Fidelity and Deposit, a top quality Baltimore company specializing in fidelity and surety, had a capital and surplus at the end of last year 270% of its earned premiums; on the other hand, Liberty Mutual, a Boston company with no stockholders and specializing in workmen's compensation, had a capital and surplus only 31% of earned premiums. Both are considered to be well managed companies in the

A corner of the new Cities Service petrochemical plant at Lake Charles, La.

Cities Service on the move

Even without visible motion—action! The shining towers and conduits of this new orthoxylene plant symbolize Cities Service progress in the expanding field of petrochemicals.

Chemists know that petroleum is a great storehouse, laden with materials vital to today's industry—resins, plastics, dyes, pharmaceuticals—only the imagination can complete the list. To make the best possible use of this abundance through an ever-increasing flow of new and better petrochemical products—*Cities Service is on the move!*

CITIES SERVICE

United States and both have been successful over the years.

Capital and Surplus

These are the two extremes. In general if a company's capital and surplus is 100% of its earned premiums it is considered to be in a comfortable underwriting position as far as capacity is concerned. Of the 68 companies which we survey annually, 19 were in this position, capital and surplus were 100% or more of earned premiums. In this group are such well-known companies as Federal, Continental Insurance, Phoenix, Insurance Co. of North America, Great American, United States Fire, Home and St. Paul Fire & Marine. Most companies are in the middle group where capital and surplus are 50% to 100% of earned premiums, 34 in all or exactly 50% of the total. In this group are such well-known companies as Hartford Fire, Fireman's Fund, Continental Casualty, Aetna, Commercial Union-North British, Royal Globe, etc.

And in what we would call the most exposed group, where capital and surplus are less than 50% of earned premiums, there are only 15 companies or about 20% of the total, including Allstate, Government Employees, Ohio Casualty and Liberty Mutual. I suppose every company would like to be in the top category, the least exposed, or conversely the group having the most surplus underwriting capacity. Certainly it is the most enviable position. And yet in the most exposed group are fast growing companies that have excellent loss ratios, whose writings by their very success have outdistanced their capital and surplus.

The least exposed companies insurance-wise should theoretically be able to undertake more investment exposure in common stocks. And that is actually the case. Continental Insurance, Phoenix, Insurance Co. of North America and Great American all have approximately the same financial strength, very strong companies with capital and surplus approximately 150% of earned premiums. All of these companies have in turn a capital and surplus which is approximately 100% of common stockholdings, or in other words 100% invested in common stocks.

Actually the company which is most heavily invested in common stocks is in the second category of companies, Northern Insurance of New York. Its capital and surplus is 65% of its earned premiums and yet its capital and surplus is 80% of its common stockholdings. In other words it has all of its capital and surplus invested in common stocks and then some. The success of this policy has been well evident.

The company which is least invested is Travelers Indemnity which is owned by a "rich parent," The Travelers Insurance Co., which is the largest stock insurance company in America. Travelers Indemnity had a capital and surplus only 47% of earned premiums and its capital and surplus was 724% of its common stockholdings. It had a very niggardly investment in common stocks. It is interesting to compare Travelers Indemnity with Allstate which also has a "rich parent," Sears Roebuck. With practically the same financial strength as measured by capital and surplus in relation to earned premiums, Allstate had a capital and surplus which was 128% of its common stockholdings compared with 724% for Travelers Indemnity. The Allstate men from Skokie, a suburb of Chicago, apparently were more willing to take chances than the men from Hartford, the domicile of The Travelers.

Here are some don'ts of fire and casualty investment managers in the United States, things which they do not do:

(1). Try to catch trading swings. As an almost universal rule they do not trade, they are long term investors.

(2). Invest in speculative securities. Only the "blue chips" or "tried and true" are considered suitable for insurance company investment.

(3). Try to control the companies in which they invest. Actually most states limit the amount of investment in a single company, frequently to 5% or less of the company's common stock.

(4). Invest in corporate bonds. Even though they now yield around 5% they are subject to the full 52% tax rate so that the net rate of around 2½% is substantially less than the more than 3½% which can be received currently from tax exempt state and municipal obligations.

(5). Invest in long maturities. Short or medium terms, up to 15 years, are regarded as more proper. Near term due dates help to stabilize market fluctuations.

(6). Invest in mortgages. These are considered illiquid investments, and fire and casualty managements desire liquidity because of possible catastrophe.

(7). Invest in real estate, for the same reason.

Are prime common stocks the "gambles" of yesteryear? A veritable revolution has taken place in investment thinking since World War II. Formerly bonds were regarded as the safest of investments; and they are as far as paying interest regularly and the full obligation at maturity. But bond holdings, as fire and casualty investment managers learned to their sorrow and ultimate benefit, do not protect against inflationary price rises. Prime common stocks on the other hand do. Therefore it has been common stocks since the last World War which have proved the salvation of many insurance companies. Underwriting losses, because of catastrophes as Donna last year or poor experience in automobile, have put heavy dents in fire and casualty companies' surpluses. Those companies which have been heavily invested in common stocks have been able to take these underwriting losses in stride. Common stocks have more than made up for heavy underwriting losses brought on through rate inadequacy and catastrophe.

Hartford Fire, which last year celebrated its 150th anniversary, stated its investment policy in a manner in which most other companies would agree: "The objective of our investment policy—safety of principal with highest commensurate income — remains unchanged. Emphasis continues to be on a maximum of investment in tax exempt bonds, in a minimum in other bonds, a maximum in common stocks and a minimum in straight preferred stocks. . . . We feel strongly that the broad distribution of carefully selected equities will produce an increase of income and principal over a term of years. No claim is made that interruptions in this pattern will not occur, but over 150 years of corporate existence lead us to plan for a future beyond tomorrow."

The common stocks which fire and casualty companies buy are of the highest quality. The largest holdings were concentrated, among the 68 companies surveyed, in order of importance in: International Business Machines; Standard Oil Co. (New Jersey); American Telephone & Telegraph; Texaco; Eastman Kodak; General Electric; DuPont; Minnesota Mining & Manufacturing; Virginia Electric & Power; and Texas Utilities.

The heaviest common stock purchases last year were, in order of importance in American Telephone & Telegraph, Radio Corp., Standard Oil of New Jersey, and I.B.M. These common stocks represent the *Prime Property of America.* Without them America would be a poorer country, certainly a less powerful country.

By investing in these "blue chip" common stocks, fire and casualty companies are sharing in the growth of America as well as protecting themselves against inflation. For those that can afford them, common stocks will remain the bulwark of fire and casualty investment policy in America. We are in the "Century of the Common Man," it is true; but it is also the *Century of the Common Stock.* It has been through the successful use of common stocks that the financial officers of U. S. fire and casualty insurance companies have emerged from their "dog houses" and now command positions of power.

INTERNATIONAL HARVESTER COMPANY

The Directors of International Harvester Company have declared quarterly dividend No. 173 of one dollar and seventy-five cents ($1.75) per share on the preferred stock, payable Dec. 1, 1961, to stockholders of record at the close of business on November 3, 1961.

GERARD J. EGER, Secretary

GARDNER DENVER

GARDNER-DENVER Since 1859

110th CONSECUTIVE DIVIDEND

ON COMMON STOCK

A quarterly dividend of $.50 per share on the common stock of Gardner-Denver Company has been declared by the Board of Directors of the company, payable Dec. 1, 1961, to stockholders of record at the close of business on November 9, 1961.

Quincy, Illinois
Sept. 28, 1961

O. C. Knapheide, Jr.
Secretary

Southern California Edison Company

DIVIDENDS
The Board of Directors has authorized the payment of the following quarterly dividends:

CUMULATIVE PREFERRED STOCK:

4.08% SERIES
Dividend No. 47
25½ cents per share;

4.24% SERIES
Dividend No. 24
26½ cents per share;

4.78% SERIES
Dividend No. 16
29⅞ cents per share;

4.88% SERIES
Dividend No. 56
30½ cents per share.

The above dividends are payable November 30, 1961, to stockholders of record November 5. *Checks will be mailed from the Company's office in Los Angeles, November 29.*

P. C. HALE, *Treasurer*

October 19, 1961

Edison

INTERNATIONAL HARVESTER COMPANY

The Directors of International Harvester Company have declared quarterly dividend No. 187 of sixty cents ($.60) per share on the common stock, payable Jan. 15, 1962 to stockholders of record at the close of business on Dec. 15, 1961.

GERARD J. EGER, Secretary

R. J. Reynolds Tobacco Company

Makers of
Camel, Winston, Salem & Cavalier
cigarettes
Prince Albert, George Washington
Carter Hall
smoking tobacco

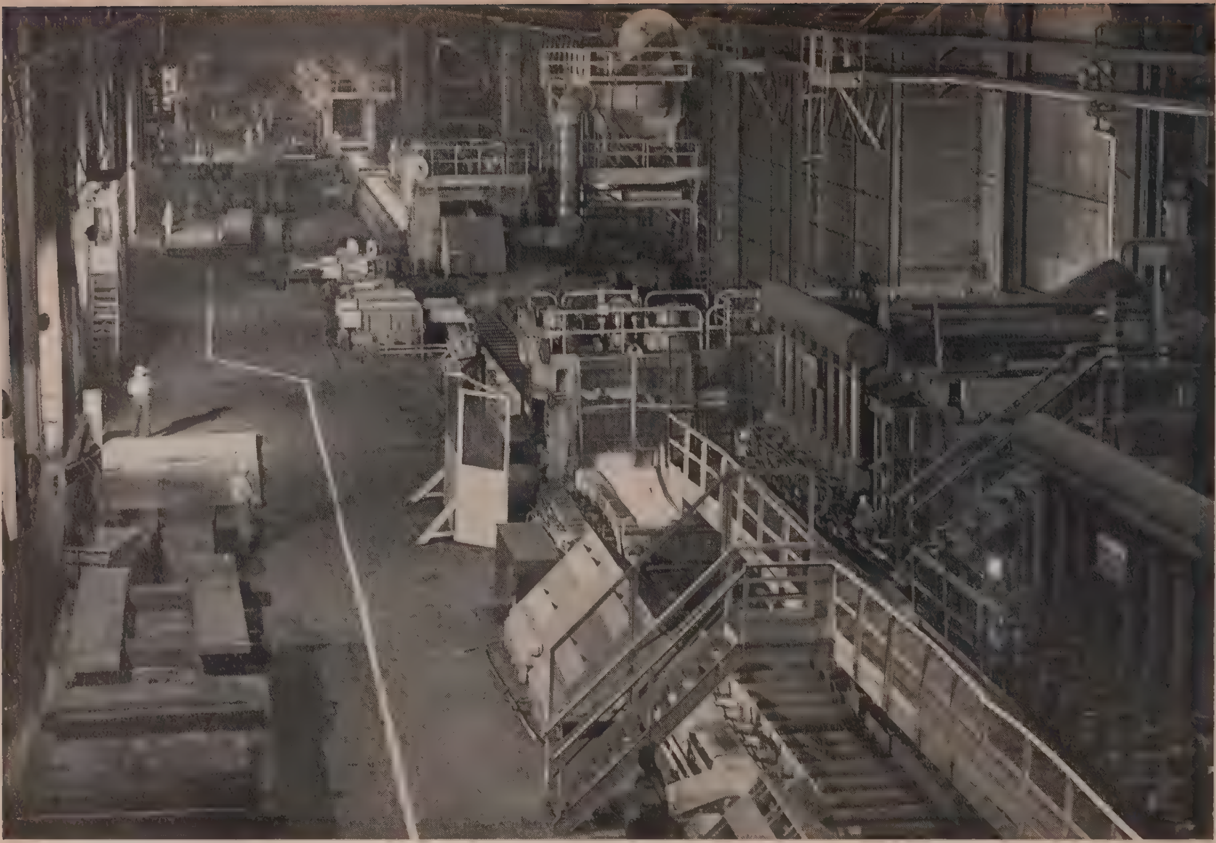
QUARTERLY DIVIDEND

A quarterly dividend of 37½c per share has been declared on the Common Stock of the Company, recently split two-for-one, payable December 5, 1961 to stockholders of record at the close of business November 15, 1961.

WILLIAM R. LYBROOK,
Secretary

Winston-Salem, N. C.
October 12, 1961

Sixty-one Consecutive Years of Cash Dividend Payments



Armco modernizes Butler Works to serve new markets for specialty steels

Armco Steel Corporation has just completed a five-year, 80-million-dollar modernization program of its Butler, Pennsylvania, Works. As a result, Armco is now able to supply users with specialty steels that are wider, thinner and in larger size coils.

Armco's Butler Works produces stainless, electrical and coated steels that are in steadily increasing demand today. Doubling of capacity for stainless steel coils is one of the most important results of the improvement program.

Key facility in the modernization program is a new 54-inch hot strip mill—one of the most powerful in the steel industry. Other important new facilities include a cold reversing mill for electrical steels, a new tandem mill for the specialty steels and an entirely new stainless steel finishing plant. The latter includes a powerful new 52-inch Sendzimir mill. Improved facilities for bright-annealing stainless steel for such decorative purposes as automotive trim also are located in this plant.

Facilities for producing wrought steel railroad wheels have been rebuilt and are now the most modern in the country.

Improvements at Butler are only a part of a vast Armco modernization program that will result in greater ability to meet the changing requirements of steel users. Armco Steel Corporation, General Offices, Middletown, Ohio.

Steel

This Steelmark says a product is made of modern, dependable steel. Use it on products you make; look for it on products you buy.

NEW STEELS ARE BORN AT ARMCO

ARMCO

Divisions: Armco • Sheffield • National Supply • Drainage & Metal Products • International

THE CORPORATE ANNUAL REPORT

by Lawrence R. Kahn

DURING THE PAST GENERATION, and particularly over the last decade, a revolution has taken place in corporate financial reporting. From little information given reluctantly, we have moved to the area of "corporate exposure" and the establishment of the "corporate image" to the stockholder and Financial Analyst. This effort has been made in many directions, but the most widespread and intensive effort has been made in the area of the annual report.

The abbreviated income account and the rudimentary balance sheet belatedly mailed to the shareholders have developed into multi-paged and many colored tomes paying tribute to the advertising agency's art and the public relations man's skill. Some factual information and additional pertinent data have also been added.

The development and elaboration of the annual report has been due largely to corporation management's awareness of its growing public ownership and to that ownership's interest in receiving financial information. It has also been due, to a considerable degree, to the broadening field of security analysis and the rising influence that the practitioners of this art—for it is hardly yet a science—have on the total area of investments.

From the point of view of the investor and the financial community that serves the investor, the desire of the corporation to set forth increasing amounts of meaningful information is all to the good. Investment decisions, from the smallest to the largest, are, at best hazardous occupations. The greatest amount of pertinent information that can be brought to bear upon the decision, the greater the chance that the opinion will be correct. Furthermore, the greater the concentration of valuable information in one publication, the less searching the investor, or the investment analyst, who is only the research proxy for the investor, will have to do.

Basically, therefore, the development and growth of the annual report, like the general expansion of the field of corporate information, should be encouraged. The fundamental idea is all to the good. The execution, however, requires a much more careful appraisal.

There is no doubt that the annual report has become larger, more detailed, and much more elaborate. Charts, pictures, cartoons, tables, and in some instances detailed description of trivia are interspersed with trick formats, unusual covers — and in one instance a mailing container which was almost impossible to open. In the latter category I might also include the "cute" report on a long playing record. This was particularly worthwhile to the investor and Financial Analyst who always just manages to carry a record player along with him. To put it more succinctly, a considerable part of the growth and expansion of the annual report seems to deal with the size and novelty of the report rather than with the quality of it.

Cost Factor Important

This steady elaboration of the report, in many instances without improving its message or its function, brings us to a point where some basic decisions in regard to it must be made. This is especially true as the cost of preparing, printing, and distributing the report is becoming a significant figure. To the larger concerns, the amount spent may be minor in relation to the advertising and public relations budgets, but to the smaller or rapidly growing concern that needs every penny, but also wishes to make as good an impression on their investors and the financial community as their more prosperous competitors, the cost equation of an elaborate report is an important one.

At this point of steadily rising costs and ever increasing size, it is time to determine what is really desired of the annual report. Nor is this a decision to be left to those who are financially or job-wise beneficiaries of the report. The aim of the annual report must be a top management decision! In the final analysis the entire report reflects top management, not just the letter in the front dutifully signed by the president and the chairman of the board. What the report is intended to do, therefore, *must be top management's first decision.*

The original objective of the annual report was simple and direct: to pass along to the stockholders a brief record of the preceding year's operations and the company's financial position at the fiscal year-end. This objective was broadened in time to include a written statement as well as the stark figures. After a while the written word of the head of concern even began to say something, if not about the prospects for the current year, at least about what happened in the past. This trend was most salutory. Unfortunately, as more and more people got into the act of writing the president's letter and as more industrial and mass psychology began to be incorporated in it, the simple basic motives got lost. In too many instances, the letter has now developed an ambiguity and obscurity that makes the old "I'll say nothing" statement a mine of information. Actually the president's letter, briefly and clearly stated,

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Lawrence R. Kahn, vice president, Investment Research, for A. G. Becker & Co., is a past president of The New York Society of Security Analysts and a vice president of The Financial Analysts Federation. Mr. Kahn is also Associate Professor at Pace College, and Chairman of the Federation's Admissions Committee.

should be the most important part of an annual report exclusive of the figures it is setting forth. Certainly it should reflect the attitude and personality of the chief executive.

The Vital Role of Management

A concise statement as to what brought about the sales and earnings of the preceding year (not a lengthy review of operations), some idea of what the company is looking forward to in the current year, and any major changes or developments that may be underway should be set forth here. At this point it may be worth stating that a shareholder has a right to believe that management should have rather concrete ideas as to what it feels the company will do during the year. This is not a request for specific sales or earnings estimates. Nonetheless, to take the pose that management has no objectives in mind or doesn't know where it is going reflects either a terrible naivete or horrible incompetence. The fear of being wrong should not inhibit management to the point of doing nothing.

The idea of using the annual report for purposes other than its original intent probably arose when some brilliant advertising man realized that in the shareholders and other recipients of the annual report the company had a captive audience. There was also the theory that in its shareholders the company should have potential customers. Certainly this is true in theory, but in most instances it hasn't been capitalized too successfully in practice; and many who have attempted it have wondered whether the business is worth the cost. At any rate the annual report is hardly the vehicle for a sales campaign.

From a sales brochure the annual report was then, in a number of instances, further diverted into a report to the employees. While a report to employees who are not also stockholders is undoubtedly an astute facet of personnel relations and a very worthwhile idea for better employee communications, the annual report is hardly the vehicle for it. The figures the bulk of the employees wish to see or can understand (and this also pertains to the majority of the stockholders) are hardly the difficult-to-understand formal income account or balance sheet, or even the flow of funds figures if the company is advanced enough to include them. Furthermore, the information which should be presented to the employees in a year-end report, and its method of presentation, are largely of little interest to the stockholders or Financial Analysts. Have an annual report for the employees by all means, but don't attempt to distort the annual financial report in an attempt to make one publication do many jobs. Management generally ends up by having it do none very well.

Having come to the point where it can be said safely that the corporate annual report should be exclusively what it is said to be, and not a sales brochure, an employee relations pamphlet, a publicity release, or what have you, how should the report go about achieving its goal? Furthermore, how can this be accomplished without spending more and more money on the production?

At the present, and this situation is likely to intensify in the foreseeable future, the annual report has to get its story across to two widely different groups of people: the average individual stockholder, including in steadily increasing numbers what the late Robert Young called the Aunt Janes, and the financial community. The needs, desires, background, and understanding of these two groups are poles apart. The latter is, or should be, a highly trained, knowledgeable, sophisticated student of corporate affairs and accounting practices. The former range all over the intellectual lot from the practically illiterate to those well versed in corporate affairs; but the bulk have, at best, an extremely limited understanding of financial shorthand. Even where understanding exists, the bulk of the stockholders are not willing to undertake the study and research necessary to obtain value from the average or even the above-average report.

'Stay on a Single Track'

If it is conceded that we have two vastly different audiences for the annual report and that their needs and desires have little in common, why must we attempt to satisfy these diverse requirements in one report, especially as it is generally agreed that both groups are of considerable importance to any publicly owned company. To make the situation even more absurd, the attempt to satisfy both groups only succeeds in satisfying neither, or in producing such an unwieldy and expensive report that the basic aims are nullified.

Why shouldn't the annual report be restored to its original function?; namely, telling the stockholder or prospective stockholder what transpired last year and what the company believes may take place during the current one. Furthermore, why shouldn't this be done in language that the average reader can understand and, *even more important,* be willing to read. Formal income account and balance sheets should be taboo here. In their present form, they are more intended to hide than reveal, anyway; and they tend to confuse rather than aid the average stockholder. A simplified form revealing what sales, earnings, taxes, and dividends were and how they compared with the preceding year is what is really desired. Furthermore, this information should, in many instances, be reduced to a per share basis so that the stockholder knows what it means to him.

The balance sheet can take even greater revision. This is a mystery to many highly trained people. A simplification of the balance sheet, showing what the assets of the company are, which are liquid and which are permanent, and what liabilities have to be taken care of out of these assets is really all that is needed along with some statement as to the number of shares and the amount of debt. Again the reduction of some of this data on a per share basis, but so set up as to reveal that the assets are employed and needed in the business, would be valuable.

Soft-pedal the Frills; Shout the Facts

How about pictures, graphs, charts, and the rest of the window dressing? Where they are strictly meaningful they should be included by all means, but I am afraid that most are included for the decorative effect. I was amused recently to read that a company that specializes in making graphs and charts for annual reports stated that a study they made revealed that the average shareholder wanted them. These "objective" studies are like quoting Fidel as saying he likes Castroism. Most shareholders don't seem to know what the graphs are all about. For the Financial Analyst, the actual figures are far more helpful.

Obviously, such a report, which will be brief and simple, will not include the all-inclusive financial data desired by the financial community or a small portion of the shareholders. For this group a small printing of a far more detailed report can be prepared. Here we can include a complete income account showing among other items research expenditures, depreciation and depletion, which now too frequently have to be hunted for in the accountant's over-elaborate footnotes. Here, too, we can have well worked out flow of funds figures and thorough balance sheets. In the written text should be a complete discussion of operations of the various divisions with the problems that may have arisen; some discussion of pricing conditions if pertinent; labor relations and costs; foreign operations, and capital expenditures. Longer term tabulations of comparable figures should also be included.

This report, along with the shareholder's report, could be mailed directly to those on the stockholder list to whom it would apply. This would naturally include all banks and trust companies, statistical organizations, insurance companies, mutual funds, pension funds, investment counselors, and brokerage houses. A return post card could be included with the other reports for those who might wish to receive this document. My guess would be that only a small number of the other shareholders would ask for it; and many of those, after receiving it for the first time, would not be inclined to ask for it again.

In an age where we are devising drugs for each disease and each type of it; where steel is being alloyed for each separate use; and machinery is designed for each specific operation; can we desire or expect less of our reporting of corporate activities — especially when we can do a far better job in the presentation and probably save money as well. Now is the time for a reappraisal and a decision.

NO HOT TIPS HERE

A recent advertisement of Merrill Lynch, Pierce, Fenner & Smith—titled "Some Prose About Cons"—served to remind us that the *Financial Analysts Journal* should also "talk about the number of things we *don't* provide."

And now we quote from Merrill Lynch's ad: "Hot tips on the market? *Fresh out now and always;* Ten stocks bound to go up? *Same story;* Tip sheets with all the 'inside' dope? *Don't even ask;* Penny stock recommendations? *Special policy forbids;* Get-rich-quick schemes, magic formulas for profits? *Try tea leaves."*

Court Hears Financial Analysts Journal Is a 'Leading Technical Publication'

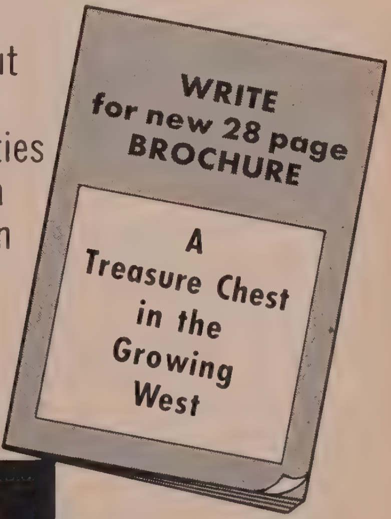
In a recent probate case in New Jersey, a reprint of the [Financial] Analysts Journal—at the time of the reprint it was The Analysts Journal—was admitted into evidence. The reprint was "Are Accounting Requirements for Stock Dividends Obsolete?," by C. Austin Barker, now with Hornblower & Weeks.

Court testimony of the witness on the relative standing of the Journal in the field of investment publication was as follows: "It is the leading technical publication on security analysis in the United States."

(*Understandably, under court tension, the witness forgot that there are two Financial Analysts Societies in Canada, and both members of The Financial Analysts Federation, which in turn publishes the Financial Analysts Journal—Editor*).

In calling this interesting sidelight to the attention of The Journal, Mr. Barker states:

"It may be that this is the first time The [Financial] Analysts Journal has been accepted formally into evidence in any court case; but I cannot be sure. If so, this would be a precedent and if admission was objected to in the future, objections might more readily be overruled. At any rate The Journal has again been recognized as it deserves."



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A Growing Company
in a Growing West

LOCKHEED
Progress Report

Why the U. S. Navy plans to invest a billion dollars on oceanographic research during the next 10 years.

OCEANIC OUTLOOK

In the deadly game of hide-and-seek with "enemy" subs, the Navy's Anti-Submarine Warfare forces must cope with technological changes that may give the hunted new advantages over the hunter. One of these changes is nuclear power. It enables a submarine to run much deeper and faster than a conventional sub -- and to stay submerged for months at a time.

The Russians are building nuclear subs, according to informed reports -- a whole fleet of them. To visualize the threat to America's economic and military life lines these Red subs present, remember the great number of freighters and tankers that were sunk during World War II by just a handful of Nazi subs.

U. S. Navy nuclear subs went undetected in recent war games, pointing up the urgency of improving detection methods. Because saltwater is opaque to most electromagnetic radiation, sonar--listening to underwater sounds--has been the most effective method. But although sonar is much better now than it was during World War II, it is reliable for only a short distance. And that is not good enough for nuclear sub speeds and depths.

The key is oceanography. To deal with this new danger, the Navy has embarked on Tenoc (for "Ten Years of Oceanography"), a $1-billion program of basic research. It will include intensive studies in physical oceanography and in marine geology, biology and chemistry. It will map the ocean floor, discover great currents that flow through the depths, seek new methods of underwater communication. From this new knowledge will come better ways of tracking down enemy subs -- and of protecting our own subs from the enemy.

Lockheed's total approach to the problem fits neatly into the Navy's program because it includes the surface of the sea and the aerospace above it, as well as the depths below. With headquarters in Burbank, California, Lockheed's Anti-Submarine Warfare and Ocean Systems Organization is a corporation-wide group that can call upon the special skills and experience of more than 10,000 scientists, engineers, and technologists in every division and subsidiary.

Lockheed's ASW projects include hunter-killer planes and helicopters, destroyers and hydrofoils, radar and photographic systems, and sonobuoys. Ocean systems projects include porpoise studies, unmanned submersibles, oceanographic instrumentation, electronic mine detection, internal wave studies, and weather buoys. The group is also conducting company-sponsored research. In fact, Lockheed's Sea Quest is one of the few industry-owned ships devoted primarily to oceanographic research.

Though Navy research is for defense, who can now foresee all of the benefits it may ultimately bring to a world at peace? Beyond the urgency of military needs lie new sources of wealth to fire the imagination: stretches of ocean floor strewn thickly with nodules of manganese dioxide...giant kelp and other sea plants to be harvested for food and raw materials...huge creatures of the deep in countless numbers to feed a protein-hungry world.

* * * * * *

If you would like to join those in the financial community who receive reports on Lockheed's activities, please write Mr. Ernest A. Foster, Director of Stockholder Relations, Lockheed Aircraft Corporation, 2555 N. Hollywood Way, Burbank, California.

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Investment Casting—A Big Growth Industry

by William M. Weaver, Jr.

THE COMING OF THE TURBOJET AGE has made investment casting a big industry. Key to the future growth of this industry is the ability of investment casting to make complicated high performance parts economically.

The end of World War II saw the development of an aircraft power plant that has shrunk the world by half. Flying at over 600 miles per hour in a modern commercial jetliner, today's air traveler flies from New York to San Francisco—a 2,587 mile hop in six hours. This same trip in the pre-jet age was an overnight affair, lasting about nine and one-half hours.

Probably the most critical part of the turbojet engine that makes all this possible is the turbine section. Here turbine blades and stationary vanes with finely tapered airfoil shapes have to withstand temperatures over 1,700° F. Alloys that can withstand these conditions are so tough that they are extremely difficult to forge and to machine. Investment casting, with its ability to duplicate with great precision any shape desired, regardless of the alloy, has been the economical process for these parts. Over the years, literally millions of investment cast parts have been manufactured for turbojet and other gas turbine type engines.

The gas turbine is the key to the investment casting industry. Since the development of military jets, turbine power plants have accounted for the major share of the investment casting dollar volume. This picture is not expected to change in the future. What will and has been changing is the nature of the turbine devices. Today turbine powered small accessory pumps and small engines developing under 200 horsepower are being produced as well as giant jet engines that propel our bombers at supersonic speeds. Big jets for military and commercial airliner applications are still the most important factor in the industry, but the trend is definitely to the smaller packages.

Many New Uses Coming

Gas turbines have had a dramatic and successful past and are expected to have just as big a future. The tremendous power generated by a small package, the fact that they need not be warmed up, and their ability to burn cheap fuels are winning a host of new uses for these power plants. More and more of these uses are non-military applications. In fact, the definite trend towards increasing commercial use of turbine power is a strong indication of the healthy future ahead for investment casting industry.

The next few years will witness increasing use of turbines in helicopters, boats, locomotives and executive planes. Even the smallest private planes will probably have turbine power in the future.

The automobile of the future has been visualized by many people as a turbine-powered vehicle. Well publicized turbine cars have been under test by the big three of motordom for several years. However, best guesses are that turbine cars are many years away still. When they come, the investment casting industry can anticipate a tremendous growth. Probably, pre-production quantities of turbine engines for automotive use will be available in 1965. First use of turbine power on our highways will most likely be in long haul trucks. A few big overland (off the highway) trucks have already been equipped with these power plants for experimental operation.

Investment casting is a casting technique that can duplicate extremely complicated shapes (even combinations of shapes) very closely to the exact dimensions desired. It doesn't make any difference whether the process is used to work with a tough superalloy for high temperature use or a low melting alloy like aluminum. These two properties, the ability to handle very tough materials and the ability to make complicated parts to close tolerances, account for practically all of the uses of investment casting.

Because superalloys used in jet engines have to be very tough to withstand the high temperatures they encounter, they are difficult and in some cases impossible to forge. In any case, machining rough forged parts to finished dimensions is a slow and expensive process. Also, many parts made from easy machining materials are of such complicated shape that machining costs again run high. In both these cases, investment casting offers a more economical method of mass production.

Several other very valuable features are offered by this process. Smooth, clean-as-cast surfaces can easily be obtained. Surfaces of many parts, in fact, are left in the as-cast condition. Not only are they pleasing in appearance, with a "finished" look, but the dimensions can be kept to a tolerance of plus or minus 0.005 inches per inch of dimension. As-cast tolerances like this, in many cases, make finish machining completely unnecessary. Also important is the dense, sound metallurgical structure obtained with investment casting. When critical parts must be subjected to killing conditions, a sound, defect-free structure is a necessity. High standards of quality control continue to maintain outstanding structural properties in investment cast parts.

Investment casting is certainly one of the most mod-

William M. Weaver, Jr., president of Howe Sound Company, is a graduate of Princeton and a Phi Beta Kappa. During World War II he served as a colonel in the Army Intelligence Corps. Mr. Weaver is generally credited with the transformation of Howe Sound from a mining company to a widely diversified metals manufacturer.

ern of our metal working techniques; and yet, this process actually has an extremely ancient lineage. As long as 4,000 years ago, in ancient Egypt, or perhaps earlier in China, the "lost wax" method of casting was in use in the creation of statues, artifacts, and even porcelain and mirros. Of the ancients, the craftsmen of India appear to have been furthest advanced in the ability to "invest" highly intricate patterns. But the process did not reach its full flowering until the Renaissance. The great Italian artist and craftsman, Benvenuto Cellini, was the first to realize the full potentialities of this method. In his workshop, statues and *objets d'art* of incredible complexity and detail were created. These superb works of art set the standards of craftsmanship by which later work in this medium has been judged.

Investment casting is frequently referred to as the "lost wax" process. It is this feature of using wax (sometimes plastic today) patterns to form the mold that allows such extreme complexity of detail. Several steps are required in the investment casting process. Molds or dies for the wax (or plastic) patterns are first made by master craftsmen. It is here that the craftsman fashions the fine detail desired in the finished casting. Because these dies are only used to form wax or plastic patterns, they are often cast of a low melting alloy. Plastic patterns require machined and hardened steel dies. After the dies are fabricated, plastic or wax is injected into the die under pressure to make a "pattern" in the form desired. If extremely complicated shapes are required, several patterns can be joined together. "Investment" comes next. First, the pattern is dipped into a fine silica solution. Silica adheres to the wax surface and helps to produce a smooth surface on the cast parts by acting as a mold-facing material. Coated patterns with all the appropriate "gates and risers" which allow proper metal flow during casting are sealed in a container. "Investment material" — a slurry in alcohol or water of silica or some other refractory material — is poured into the container. After the "investment" hardens or "sets up" tightly around the patterns, the wax is melted out, leaving a perfect impression in a refractory mold. Molds are fired like pottery to insure high strength before the metal is cast into the cavity.

History of Investment Casting

Although the coming of the jet engine towards the end of World War II tremendously accelerated the use of investment castings, this was by far not the first industrial use of the modern process.

In 1929, the two founders of Howe Sound's Austenal Company perfected the use of investment casting for the manufacture of dental restorative appliances out of cobalt-chrome alloys. They found that the new highly corrosion resistant cobalt-chrome alloys, developed under the brand name "Vitallium," were almost impossible to forge or swage to the required shapes. Investment casting, which until that time was used to cast dental restorations out of lower temperature gold alloys, was the answer. These two pioneers made this method applicable to higher melting point alloys and called it the Microcast process.

Vitallium cobalt-chrome alloys were soon found to be useful in surgical applications as well. In 1939, Austenal applied investment casting of these corrosion resistant alloys to internal surgical fixation appliances and human bone replacement parts. Austenal was the first to make this major contribution to medicine, and is still today the leader in the field with a substantial portion of the market.

Over 10 years after the development of investment cast dental appliances, this process found an important military use. In the early part of World War II a military aircraft engine was developed that combined the conventional reciprocating or piston-driven engine with the first major use of turbine power in industry. Turbine power from hot exhaust gases was used by these engines to drive a supercharger that supplied high pressure air to the cylinders. These supplanted to a great extent the gear-driven supercharger that robbed power from the engine. Certain high performance automobiles — particularly racing cars — have in recent years been equipped with superchargers. Their effect is to considerably increase the compression ratio and hence the power of the engine. In order to withstand the extremely high exhaust temperatures and high stresses, the turbine blades had to be made from high temperature cobalt-chrome alloys. The tough fabricating problem was solved by investment casting. Millions of these turbine blades for superchargers, called buckets, were supplied during World War II.

The importance of the coming of the jet engine to the investment casting industry has already been indicated. Of prime importance to our national defense in the years after World War II, more and ever higher powered jet engines were being produced. During these years, from around 1945 to 1953, the investment casting industry achieved its greatest growth. Industry sales continued to climb from $80,000,000 in 1953 to a peak of $115,000,000 in 1956. In fact, 1956 was the year that an important military decision was made in favor of missiles over manned aircraft. All the aircraft industries and their suppliers, including the investment casting industry, were severely affected. As a result, industry sales in 1957 fell below the $80 million level. The following year, however, defense planners re-evaluated our military needs and again considered manned aircraft important to the services. Increasing dollar volumes of $85 million in 1959 and $87 million in 1960 have reflected this decision. The coming of commercial jetliners has been responsible for part of this volume, of course. Volume of large jets is not likely to go as high as in 1953—not in the immediate future, anyway.

Where Investment Castings Are Used

A rough breakdown of the investment casting industry is given in the accompanying table. By far the most important market today, as it has been since World War II, is aircraft use. Turbine blades, vanes and engine structural members, supplied primarily to large engines of 2,000 horsepower and more, are the biggest volume parts. Investment cast parts for these large engines are pretty much limited to the hot end of the engine—the turbine section. Smaller engines, up to 2,000 horsepower, are growing in significance, however. Investment castings in smaller engines are finding their way into the compressor end of the engine as well.

Investment Casting Industry Breakdown

	Per Cent of Total Market
Aircraft—(Engine, airframe auxiliary and accessory equipment) Other Auxiliary Power Packages	75
Electronics	5 - 10
Chemical Industry	2 - 3
Ordnance	3
Textile Machinery	1
Miscellaneous	6 - 7

Other segments of the aircraft industry make use of investment castings too. A number of airframe manufacturers have been using investment cast alloy steel parts as structural members in airframes. This is not a big use as yet, but certain complicated shapes can be produced by this method with high structural strength at low cost.

An increasingly significant volume of precision cast parts are being designed into auxiliary power plants and accessory equipment. Some examples of these uses are cabin pressurizers, big jet engine starters for use at the air field, in-flight starters and accessory pumps. Electric power in flight is frequently obtained from small turbines using compressed air tapped off from the jet engines.

Reciprocating aircraft engines are still being manufactured, although in low volume. Investment cast turbo supercharger parts are still supplied to this market.

Superchargers will increase the performance of automotive and truck engines as well as aircraft power plants. A major manufacturer of diesel powered trucks designed an investment cast turbo supercharger. Called a radial type turbine wheel, or sometimes an impeller, turbochargers of this type are now widely used in trucking equipment throughout the country.

The uses that were mentioned in the last section can be summed up as the *power* uses of investment casting. Power plants probably account for something like 75% of today's market. However, many non-power uses have been developed because of the method's unique advantages. Literally thousands of consumer and industrial products are making use of this process. Some of these applications are based on the requirements of hard to fabricate alloys. Yet, there are a number of products that use time honored and relatively low melting alloys like bronze, brass and aluminum. Complicated casting of these low melting copper-base alloys are made for the electronics industry and account for about 5 to 10% of the total industry. These castings are used as waveguides and other parts in electronic gear.

Die casting—a process in which metal is injected directly into machined steel dies—is frequently used for relatively low melting alloys like aluminum and brass. Fairly complicated shapes can be obtained with this method. But in order for die casting to be economical, a very high volume of parts must be produced to offset the high cost of the dies. Because most kinds of electronic gear are not usually produced in very high volume (equipment made for the military) for example, investment casting has proved to be the more economical method of manufacture.

Dental and Surgical

Howe Sound's Austenal Company was the original developer of cobalt-chrome alloy investment castings and is still the major factor in the dental and surgical field. These two applications have been showing a steady growth curve for the last several years—a growth pattern that is expected to continue at a rate of about 10% per year.

Investment castings for the orthopedic profession differ from industrial castings, but nevertheless require precision workmanship. Considerable care is expended to insure that such surgical appliances whether of standard design or custom made are functional and dependable. Since many are permanently implanted in the human body, thorough control must be exercised that they meet exacting quality specifications.

Dental castings represent a different type of precision workmanship. Each single item must be carefully fitted to one human being. Due to these requirements for personalized service, most of the actual casting is done by many franchised dental laboratories throughout this country and abroad. In 1958, Austenal brought out a new precious metal alloy and porcelain called Micro-Bond. In less than two years this technique for bonding porcelain to precious metal for dental crowns and bridges has gained national recognition.

Surgical applications cover a wide variety of types of appliances and sizes: Plates, screws and nails for fixing fractures, cups and replacement parts for restoring movement to joints, and special instruments that are used in such operations. Surgeons have been increasingly specifying investment cast Vitallium appliances and other products as reflected in a 10% volume increase each year—a rate of growth that is expected to continue.

Investment cast valves and parts for the chemical industry is at present about a $2 million market or about 2 to 3% of the total. This healthy and increasing outlet for investment castings is based on the need for tough, very high corrosion resistant materials to avoid contamination of foods and chemicals. Although these materials could be cast by shell or sand mold methods, a higher quality finish is obtained with investment casting. Better looking castings are important because only certain important dimensions are machined. Companies that invest in bright, shiny new chemical process equipment insist on good looking castings. Just good appearance is not enough, of course. Investment castings are lower in cost because they can be finish machined on semi-automatic setups. Sand castings, on the other hand, require manual setup.

Ordnance and Miscellaneous

A great variety of uses makes up the remainder of the investment casting industry. Ordnance equipment involving small complicated parts for guns probably accounts for about 3% of the total volume. In the textile industry, sewing machine parts and many parts for knitting and weaving machinery are made by this process. Small metal fasteners for aircraft and machinery are investment cast. Phonographs, washing machines, motion picture cameras, electric shavers, these products and many others make use of investment cast parts.

THE NEXT FEW YEARS

The next few years should see a modest increase in demand for investment castings. Demand for large turbojet engines should fall off a little, but this should be made up in increases in other areas. Small engines and small power packs are the biggest growth areas for the immediate future. Many uses—both military and commercial—have already been made of smaller engines. Executive planes, helicopters, military trainers and drones are just the forerunners of the many small craft that are expected to switch to turbine power. Industrial uses of small power packs have included pumps for fire fighting equipment and an emergency power supply to pump water to a community in time of disaster. A great many utilities use turbine generators for peak load power, as well as for stand-by use in case of failure.

Through the years a vast store of experience and knowledge has been accumulated from the highly intricate parts required for military aircraft. This experience has been a strong contributing factor in the successful development of commercial markets. And commercial markets are being developed at a rapid rate. One study has shown that for jet engines alone, commercial applications are increasing from 10% of the volume in 1959 to an anticipated 35% of the total in 1965. An even greater penetration by commercial applications is expected in the auxiliary power and small engine field.

Other Factors

Our military strategists have seen the need for manned aircraft operating in the mach 2.3 to 3 range—1,750 m.p.h. to 2,280 m.p.h. These extremely high performance aircraft will require engines of very high power output. Increased operating temperatures will be necessary to get this higher power. Exotic alloy parts with complicated shapes to allow a maximum of air cooling will be required to cope with these higher temperatures. Presently, investment casting looks like it will be the best method for making these parts. Vigorous research and development is under way to create the casting techniques required for these shapes.

All of the new exotic alloys that will be used require careful control of chemistry. Vacuum melting and vacuum casting techniques are necessary. The investment casting industry has already equipped itself to produce a high volume of parts with this manufacturing process.

A LONG VIEW

The key to more commercial uses of turbine power will be the lower costs possible with investment casting. Casting techniques are constantly being refined. Costs in any manufactured article can be reduced substantially when several parts are integrated into one unit. Dramatic savings were effected by replacing a fabricated turbine stator assembly of more than 35 pieces with one piece casting.

Integral parts that duplicate in one casting what formerly took many separately fabricated and assembled parts, is one of the great cost cutting potentials investment casting offers to turbine manufacturers. Design engineers are understandably slow to accept radical new techniques. They require long testing programs to insure that expensive mistakes aren't made. Integrally cast parts are an innovation and have been undergoing thorough testing by both the investment casting industry and engine manufacturers. So far, stationary assemblies have been accepted by engineers and are being supplied. More uses are on the way.

Rotating wheels have been supplied for many years. But bucket type turbine wheels have always been manufactured by fabricating and assembling buckets and turbine disc. Integrally cast wheels would enormously cut costs. Intensive testing is under way and engineering approval is anticipated in a couple of years. General use can be expected in three to five years. Larger turbine wheels for bigger engines are just a matter of time. Lower cost turbine engines from sophisticated investment casting techniques promise to give a tremendous push to the expanding uses of turbine power—and to the investment casting industry.

40% of New Products Today Didn't Exist 10 Years Ago

"Statistics at times are like a bikini bathing suit. You can't tell if they're trying to hide something—or reveal it. The statistic on new products, for example, is extremely interesting. It reveals that more than 40% of products now in use were unknown 10 years ago.

"This percentage is an eyebrow-raiser. To some people it gives the impression that all a company needs is a new product—any new product—and sales will soar into the wild blue yonder.

"However, as with the bikini, what doesn't meet the eye is equally interesting. What the new product statistic doesn't reveal is that 95% of the new products introduced in the last decade never made the grade."

HENRY KASTOR KAHN, *Chairman*
Kastor, Hilton Chesley Clifford
& Atherton, Inc.

THE RANK ORGANISATION

A YEAR OF PROGRESS AND DEVELOPMENT

In his Statement for the 52 weeks ended 24th June, 1961, The Lord Rank described the past year as an important one in the history of the Organisation. There have been substantial changes in the Group structure, and considerable developments in the scope of the Group's activities, particularly in the non-cinema interests.

RESULTS FOR 1960/61

Group profit before taxation was £5,082,240 compared with £4,002,764 last year.

The proposed final ordinary dividend of 15% as forecast, payable on the increased capital, together with the interim dividend of 7½%—making 22½% in all—compares with 15% last year, and absorbs £441,106 as against £230,371.

Group exports were in excess of £7,500,000.

FILM PRODUCTION, DISTRIBUTION AND EXHIBITION

Pinewood films produced and released during the year made an overall profit, and more than 45% of net earnings were secured abroad.

Attendances at Group theatres showed a slight upward tendency in the latter half of the year—although it is too early to say that the decline has been permanently arrested.

The theatre rationalisation and modernisation programmes have continued. A phase of redevelopment, incorporating cinemas in the redeveloped properties, has begun.

NON-THEATRICAL ENTERTAINMENT AND ALLIED ACTIVITIES

Expansion of Ballrooms and Dance Studios, and the Group's first ventures into Tenpin Bowling and Health Clubs, have all proved successful. Further developments are planned in all these fields, and also in catering. The gross dividend received this year from Southern Television was £276,120 as against £184,080 last year.

TELEVISION RETAIL AND RELAY

New relay franchises have been obtained in addition to those already operated, and 'Choiceview'—the joint venture with Rediffusion Limited into Pay-TV—has reached the stage at which a field trial could be carried out. The number of 'Visda' shops, retailing television, radio and consumer durable goods, has been slowly expanded.

INDUSTRIAL AND COMMERCIAL ENTERPRISES

RANK-XEROX has a great and important part to play in the Group's future. It is now in profit, and its growth amply confirms the belief we have always had in its potentialities.

RANK PRECISION INDUSTRIES has continued to develop. Heavy capital commitments have required a conservative dividend policy.

In common with other manufacturers of television sets—although to a lesser degree than most—BUSH RADIO experienced a marked decline in profits, but profits from manufacturing activities other than of television receivers continue to grow. The pioneering work of RANK CINTEL in colour television has placed it in a strong position in this market, and important developments in aircraft instrumentation have been made.

THE FUTURE

23% of Group Profits were derived from manufacturing and miscellaneous activities in 1961, which I anticipate will increase in 1961/62. I firmly believe that on our present foundation we are entitled to look forward to steadily increasing profits in the next few years providing that our programme and trading operations are not adversely affected by factors outside our control.

At the close of the Annual General Meeting the Deputy Chairman and Managing Director, Mr. John Davis, announced that proposals were being submitted to shareholders, the effect of which would, if adopted, make Gaumont British a wholly owned subsidiary company of The Rank Organisation.

A copy of the Chairman's full statement and Annual Accounts may be obtained from The Rank Organisation Limited, 38, *South Street, London, W.*1.

Portrait By
KARSH OF OTTAWA

H. O. Harder, senior vice-president, Sunray Mid-Continent Oil Company

The men who make an oil company GROW!

H. O. Harder hasn't played baseball since his sand-lot days, but he steps up to bat every day for Sunray Mid-Continent Oil Company. He's senior vice-president in charge of exploration and his 10 year "batting" average is .251 – or one successful oil or gas well out of every four wildcats drilled. The average in the oil league is .153. He and his team of landmen, geologists and geophysicists are bent on one thing – finding oil and gas reserves for this major oil company. From Abilene to Anchorage and from Lake Maracaibo to Queensland the search is on. No wonder they call Sunray, *"The oil company with growing plans!"*

Sunray Mid-Continent Oil Company, Tulsa, Oklahoma
Subsidiaries: DX Sunray Oil Company • Sunray Chemical Company • Suntide Refining Company

DX

SUNRAY

The Fallacy of 'Cash Flow' and 'Funds Generated by Depreciation'

by C. B. Flick

IF YOU USE THE TERM "Cash Flow" to denote "Net Income plus Depreciation," which is *not* cash, and the term "Funds generated by Depreciation," which is *not* "funds" nor can depreciation "generate" anything, then you are contributing to the widespread misunderstanding of financial statements.

Financial statements reflect the results of the operations and transactions of our business corporations. Too many people have misconceptions about the operations of corporations under our free enterprise profit-and-loss system. It would help if people could have a better understanding of financial statements. In our time is it more important than ever to record accurately, present clearly, and interpret correctly and understandably the facts of business and industry. To think clearly and convey ideas from our minds into the minds of other people we must use words whose meaning is understood and not use words to mean something different from their definition.

"Cash" means what the dictionary says it means: "money, especially ready money" and synonyms are "coin, specie, currency, money." Of course bank deposits are considered as "money" but assets such as accounts receivable, inventories, operating property, prepayments, are *not* money. It takes money to pay suppliers and employees and debts.

Modern corporations keep books on an accrual basis, not a cash basis. "Net Income for the Year" is *not* cash, but the end result of numerous accruals entered on the books.

Cash, not bookkeeping entries, is the life blood of a corporation. It is continuously necessary to look ahead and estimate month by month, year by year, what amounts of money are going to be needed to pay for costs of production, delivery, selling and general expenses, interest, taxes, dividends, inventories, repayment of debt, capital expenditures for land, buildings, machinery and equipment. Where will the money be obtained? Estimates must be made of shipments to and collections from customers; miscellaneous income; and proceeds of sales of assets or collection of maturing investments. Possibly it will be necessary to borrow, or in some cases capital stock may be sold. There are no other sources of cash flow; there are no other ways to generate funds.

To illustrate, I shall refer to the Annual Report of Ideal Cement Company, for the year 1960. Net Income for the Year, $13,704,449, plus Provision for Depreciation and depletion of operating property, $10,215,871, would make the mis-nomer "Cash Flow" $23,920,320. This is not cash in fact, but accruals on the books. The $23,920,320 really represents "Net Income omitting Provision for depr. and depl." and is a short-cut to restatement as follows:

Billings to Customers, Less Discounts and Allowances	$110,514,328
Other Income—Dividends, interest, etc.	681,491
Total	$111,195,819
Less:	
Cost of sales, including freight	$ 61,985,810
Selling, general and administrative expenses	6,810,879
Provision for depreciation and depletion of operating property, $10,215,871	(omitted)
Interest:	
On longterm indebtedness	1,833,913
On additional Federal income taxes for prior years	1,349,712
Taxes:	
Federal income	11,640,000
Other	3,655,185
Total	$ 87,275,499
Net Income for the Year (omitting Provision for depreciation and depletion)	$ 23,920,320

This is on an accrual, not cash basis. The actual cash receipts and disbursements can be approximated by taking into account not only the foregoing accruals of income, costs and expenses, but also the changes in the Balance Sheet items of assets and liabilities.

The first item is "Billings to Customers, less Discounts and Allowances, $110,514,328." When those billings were entered on the books as income, corresponding charges were entered to "Accounts receivable, Trade." There was no "Cash flow" until customers paid their accounts. Some paid promptly, some delayed, and in a few rare cases did not pay at all. Also, cash was collected in 1960 from accounts billed prior to 1960. The "Cash flow" from customers can be approximated as follows:

Accounts Receivable at 12/31/59	$ 5,906,953
Add Billings to Customers	110,514,328
Deduct Accounts Receivable at 12/31/60	5,549,861
Cash Receipts from Customers	$110,871,420

C. B. Flick, secretary-treasurer and a director of Ideal Cement Company, is a Certified Public Accountant and for five years he was assistant treasurer of Hawaiian Pineapple Company (Dole). Mr. Flick is a graduate of the University of California.

The next item "Other Income—Dividends, interest, etc. $681,491" may be taken as approximately cash income. Next are the charges against income:

Cost of sales, including freight	$ 61,985,810
Selling, general, and administrative expenses	6,810,879
Interest on long-term indebtedness	1,833,913
Total	$ 70,630,602

These items are accruals too. To approximate the actual cash paid out, the following computation may be made:

Total as above	$ 70,630,602
Add: Inventories at 12/31/60	11,010,563
Prepayments at 12/31/60	262,204
Accounts payable at 12/31/59	5,949,497
Subtotal	$ 87,852,866
Deduct: Inventories at 12/31/59	$ 9,928,224
Prepayments at 12/31/59	264,829
Accounts payable at 12/31/60	6,024,104
Adjustment for Operating Property disposed of: Capital Expenditures exceeded the increase in Operating Property and Provision for depreciation and depletion exceeded the increase per Balance Sheet, net adjustment	1,119,386
Total	$ 17,336,543
Cash disbursements to Suppliers, Employees, and others	$ 70,516,323

Obviously important cash receipts and disbursements can be made affecting balance sheet items and not affecting the profit and loss statement at all. For example, materials and supplies may be bought and charged to inventories, creating accounts payable which must be paid in cash even though the materials and supplies may be on hand unused for a long time. Ultimately, in some cases, items may be written off as unuseable. Inventories of finished products and products in process may be manufactured and set up as current assets with a contra credit to costs of manufacture, but those costs must be paid while the inventories remain on hand until sold. With expanding business, accounts receivable and inventories grow larger and represent money tied up and there is no "Cash flow" until accounts are collected and inventories are sold. Land, buildings, equipment may be bought and represent money tied up permanently.

Next comes "Provision for depreciation and depletion of operating property, $10,215,871." Of course the contra credit to this accrual charge on the books was to the account "Accumulated depreciation, amortization, and depletion, $78,754,173" which is deducted from the asset "Operating Property" on the Balance Sheet. No cash is involved and it is simply a mis-use of words to speak of "Funds generated from Depreciation." The effect of this bookkeeping is to reduce Net Income and to decrease the net book value of the property.

When a plant is shut down, depreciation is charged; but with no Billings to Customers how are "funds" being "generated"?

If it could be said that "funds are generated" by making a charge for Depreciation in the Profit and Loss Statement, then it would be equally correct to say that "funds are generated" by making other charges in the Profit and Loss Statement, such as the write-off of bad debts, the charge-off of obsolete and unuseable inventories, the charge-off of obsolete and abandoned plant buildings, machinery and equipment, the write-off of lease-hold improvements over the term of a lease, etc. Obviously that would be absured, and it is equally absurd to say that funds are generated by Depreciation charges.

Of course all charges allowed as deductions on income tax returns reduce the amount of taxes, but that is a different matter and has no bearing on what was just said.

Computations may be made for the other items in order to derive approximate actual cash receipts and disbursements, and the results would be as follows:

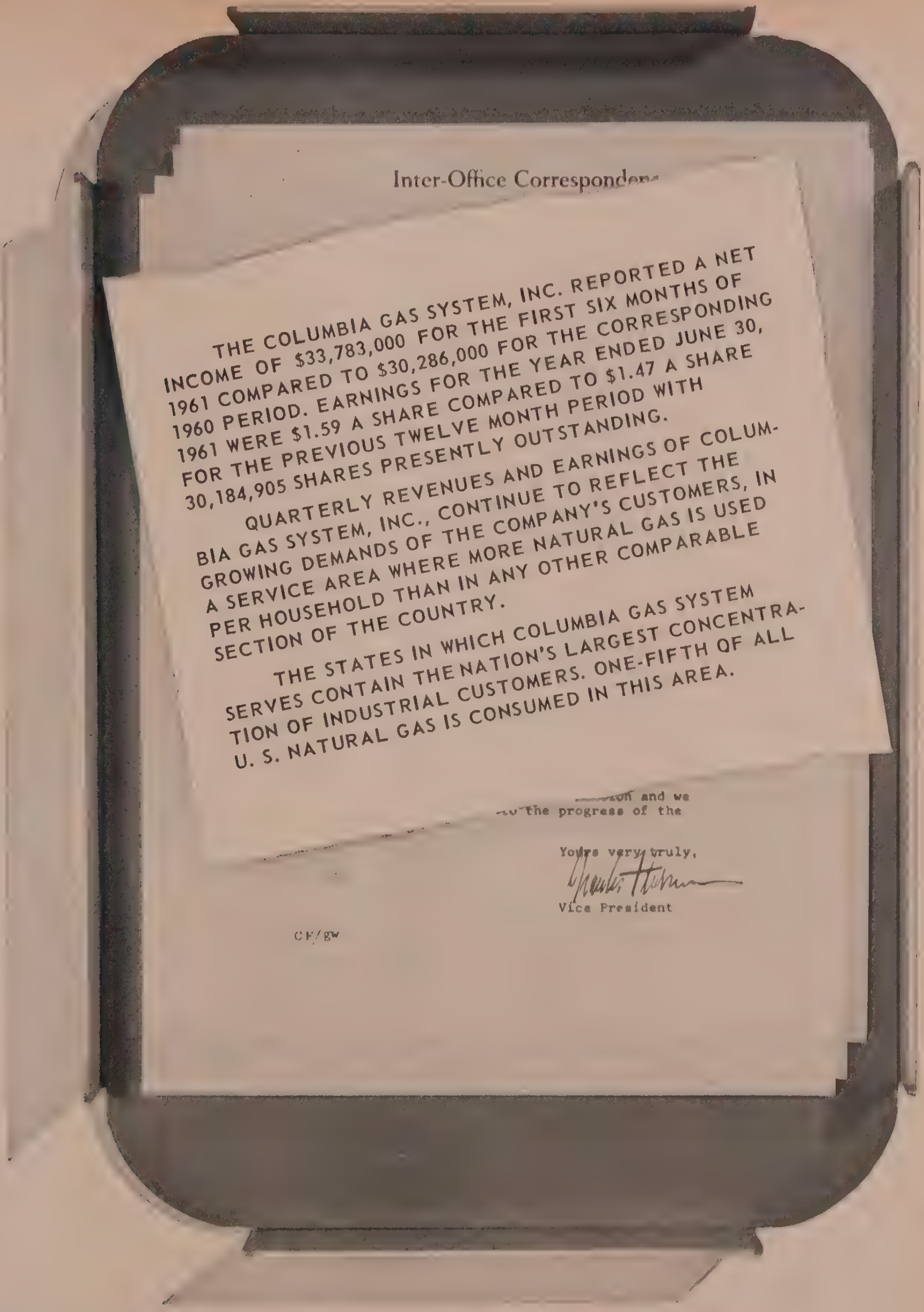
Cash Receipts from:	
Customers	$110,871,420
Dividends, interest, etc.	681,491
U. S. Government and other marketable Securities	314,845
Use of Cash and Securities previously appropriated for new construction	4,000,000
Long-Term Indebtedness incurred	15,000,000
Use of U. S. Government securities previously set aside for payment of taxes	2,859,509
Total	$133,727,265

Cash Disbursements to:	
Suppliers, Employees and others	$ 70,516,323
Interest on additional Federal income taxes for prior years	1,349,712
Federal Income Tax	11,446,053
Taxes: other	3,562,774
Other assets increased	171,692
Cash dividends paid	8,976,677
Long-Term Indebtedness paid	4,000,000
Capital Expenditures	23,289,890
Investment in Corporate Securities	434,577
Prior Years' Federal Income Taxes	10,508,930
Total	$134,256,628
Cash Disbursements exceeded Receipts	$ 529,363

This accounts for the decrease in Cash as shown on the Balance Sheet, from $8,648,441 at 12/31/59 to $8,119,078 at 12/31/60.

To conclude, I should like to urge that the words "cash" and "funds" and "generated" be used to mean what they are defined to mean and generally understood to mean. Let's avoid mis-nomers and meanings peculiar to ourselves which make it difficult for readers and listeners to know what we are talking about. The only purpose of writing and speaking is to be understood, and clearly defined words and terms are a first essential.

NEWS FROM THE COLUMBIA GAS SYSTEM



Inter-Office Corresponden

THE COLUMBIA GAS SYSTEM, INC. REPORTED A NET INCOME OF $33,783,000 FOR THE FIRST SIX MONTHS OF 1961 COMPARED TO $30,286,000 FOR THE CORRESPONDING 1960 PERIOD. EARNINGS FOR THE YEAR ENDED JUNE 30, 1961 WERE $1.59 A SHARE COMPARED TO $1.47 A SHARE FOR THE PREVIOUS TWELVE MONTH PERIOD WITH 30,184,905 SHARES PRESENTLY OUTSTANDING.

QUARTERLY REVENUES AND EARNINGS OF COLUMBIA GAS SYSTEM, INC., CONTINUE TO REFLECT THE GROWING DEMANDS OF THE COMPANY'S CUSTOMERS, IN A SERVICE AREA WHERE MORE NATURAL GAS IS USED PER HOUSEHOLD THAN IN ANY OTHER COMPARABLE SECTION OF THE COUNTRY.

THE STATES IN WHICH COLUMBIA GAS SYSTEM SERVES CONTAIN THE NATION'S LARGEST CONCENTRATION OF INDUSTRIAL CUSTOMERS. ONE-FIFTH OF ALL U. S. NATURAL GAS IS CONSUMED IN THIS AREA.

and we
the progress of the

Yours very truly,

Vice President

CF/gw

For industrial, commercial and domestic applications, natural gas continues to be the *preferred fuel* in the service territory of Columbia Gas System in Ohio, Pennsylvania, West Virginia, Kentucky, Virginia, Maryland and southern New York. Here nearly a third of the nation's gas customers live and work. Columbia Gas System service contributes directly to their comfort, convenience and economic advantage.

THE COLUMBIA *Gas* SYSTEM, INC.

COLUMBIA GAS SYSTEM SERVICE CORPORATION
COLUMBIA HYDROCARBON CORPORATION
120 East 41st Street, New York 17, N. Y.

Charleston Group: UNITED FUEL GAS COMPANY, AMERE GAS UTILITIES COMPANY, ATLANTIC SEABOARD CORPORATION, COLUMBIA GAS OF KENTUCKY, INC., VIRGINIA GAS DISTRIBUTION CORPORATION, KENTUCKY GAS TRANSMISSION CORPORATION/*Columbus Group:* THE OHIO FUEL GAS COMPANY, THE OHIO VALLEY GAS COMPANY / *Pittsburgh Group:* THE MANUFACTURERS LIGHT & HEAT COMPANY, COLUMBIA GAS OF NEW YORK, INC., COLUMBIA GAS OF MARYLAND, INC., CUMBERLAND & ALLEGHENY GAS COMPANY, HOME GAS COMPANY/COLUMBIA GULF TRANSMISSION COMPANY/THE PRESTON OIL COMPANY

National Distillers and Panhandle Eastern will help U.S. conserve Helium—

A LIGHTWEIGHT GAS WITH HEAVYWEIGHT DUTIES

Lightweight helium is receiving heavyweight responsibilities in the space age. It performs vital tasks in missile fabrication and operation, in nuclear reactors and in industrial applications, including shielded-arc welding. Helium consumption in the U. S. has increased ten-fold in the past twelve years.

National Distillers and Chemical Corporation and Panhandle Eastern Pipe Line Company have been selected to implement a Federal Government program to conserve the nation's diminishing supply of this vital gas.

The two companies have formed a jointly owned subsidiary, National Helium Corporation, to build and operate a plant at Liberal, Kansas, which will extract from natural gas a billion cubic feet of helium annually. The helium produced will be sold to the government for stockpiling on a 20-year contract, delivery to begin when the plant goes on stream in two years. When completed, the plant will be the world's largest source of helium.

The operation will also be the world's largest application of the new science of "cryogenics"—the industrial use of extreme sub-zero temperatures. Helium will be produced at the plant at temperatures as low as minus 300° F.

Helium recovery and conservation is another step in National's continuing program for growth in industrial chemicals, metals, and plastics designed to help meet the nation's increasing needs for vital materials for peace and defense.

NATIONAL DISTILLERS and CHEMICAL CORPORATION

The Company with the Five Industry Future

Liquors · Chemicals · Plastics · Fertilizers · Metals

Divisions: NATIONAL DISTILLERS PRODUCTS CO. · U. S. INDUSTRIAL CHEMICALS CO.
BRIDGEPORT BRASS CO. · KORDITE CO. · FEDERAL CHEMICAL CO.

IMPROVE YOUR RATIOS

by Richard P. Howell

For some time the "ratio" has been the major tool used by the industrial executive in gauging his relative effectiveness. Among the ratios used are those of: current assets to current liabilities; direct labor to total factory cost; overhead rate (ratio of factory overhead to direct labor); profit to net sales; profit to net worth; inventory turnover (ratio of annual sales to inventory); and others. Yet, most executives have long been aware of the shortcomings of ratios.

The management of a business of any size is, at best, an extremely complex undertaking, and the use of constant ratios in striking comparisons is usually a gross over-simplification. Overhead, for example, is known to have elements that vary with production and also elements that do not. Yet these elements that do not vary with production are not truly fixed; they change irregularly as volume expands greatly. Depreciation, for instance, may change only when the volume expands to the point where additional plant and equipment are required or to the point that a new labor-saving machine will pay for itself, but it may not change in direct ratio with output.

The fact that many articles and publications attempt to overcome the shortcomings of the use of constant ratios by presenting data by asset groupings suggests that ratios might be of more value if they could somehow be self-adjusted to relate to all sizes of business. Essentially, such a system would recognize that "all things are relative"—a trite but accepted tenet. The object of this article is to present a simple mechanical means of examining various types of business economic data as they are associated (at a *changing* ratio) with the business volume.

Economics of Cost-Quantity Relationship

In 1936, after a decade of investigation at Wright-Patterson Air Force Base, T. P. Wright reported that, in the manufacture of airframes, as the number of airframes produced increases, the average labor per unit decreases rapidly at first and then more gradually as the quantity grows.[1] In plotting this phenomenon, he obtained a curve as pictured in *Figure I*. He called this a "learning" curve, for he attributed the decrease in labor per unit to the fact that the workers were learning how to work more efficiently. Mr. Wright knew that a simple curve as shown in *Figure I* when plotted on logarithmic graph paper would appear as a straight line, as in *Figure II*. Prediction of future events could be made by merely extending this straight line on logarithmic paper, an easier task than extending a curved line on regular graph paper.

Mr. Wright's method was quickly applied to other industries and was expanded to include all types of direct costs. Each of the Armed Services now employs Mr. Wright's method to some extent in making budget estimates. *Figure III* shows the result of plotting the average unit costs against the total quantities purchased of an Army radiosonde and an Army signal generator. As shown in the figure, if the first cost had been used in estimating future costs, the future costs would have been greatly overestimated. Such an overestimate could easily result in unrealistic limitations on the quantities planned and authorized.

Learning curves (sometimes called "progress" curves or "cost reduction factors") have also been applied in long-range scheduling of production and in estimating manpower requirements, as well as in establishing a more realistic basis for production-incentive payments. An additional advantage of the use of the learning curve is that in a competitive situation, the bidder with a knowledge of learning curves can bid with the confidence of meeting his price.[2]

The learning curve technique makes use of the unique property of logarithmic paper in which a ratio of ratio appears as a straight line

---

[1] "Factors Affecting the Cost of Airplanes," Journal of Aeronautical Sciences, Vol. 3, Feb. 1936, pp. 122-128. (Leslie McDill, Commanding Officer, McCook Field, predecessor of Wright-Patterson, is credited for starting the investigation in 1925).

[2] For a more detailed exposition, see Frank J. Andress, "The Learning Curve as a Production Tool," Harvard Business Review, Jan.-Feb. 1954, pp. 87-96.

Richard P. Howell is Operations Analyst, Program Analysis Group, with the Stanford Research Institute. Prior to this he was affiliated with Bemiss Jason Corporation and a managing member of R. P. Howell & Associates. Mr. Howell has a B.S. in mathematics from the University of Washington.

Figure I

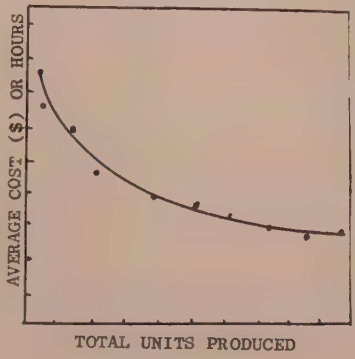


Figure II

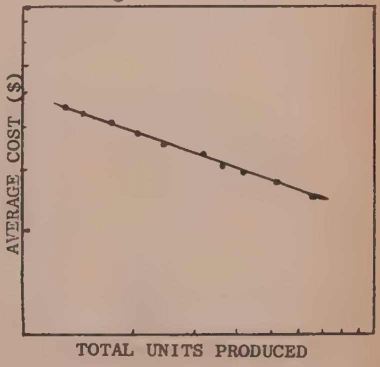
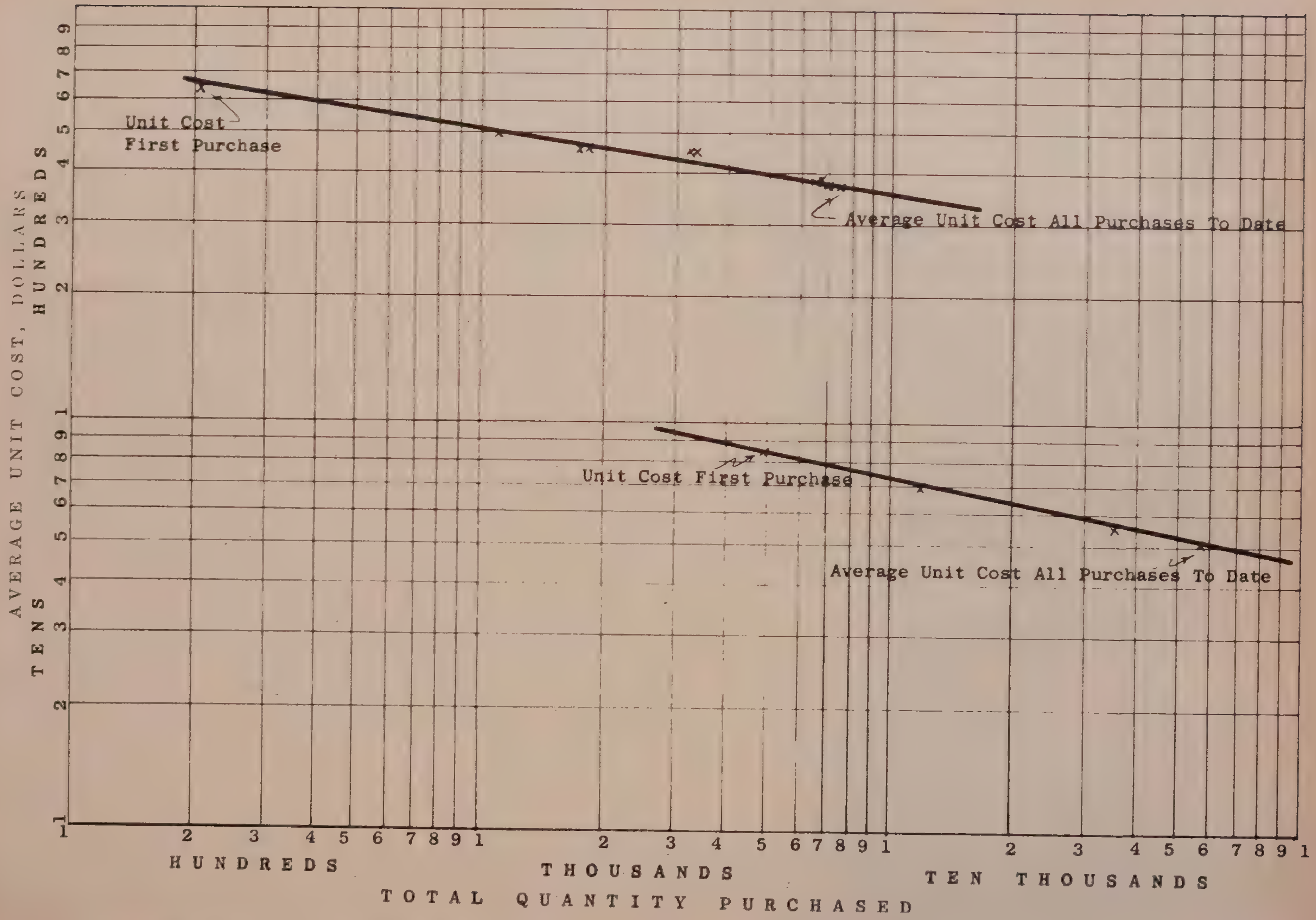


Figure III

ECONOMICS OF COST-QUANTITY RELATIONSHIP



when plotted. Thus it provides an orderly method for anticipating changes in a ratio with increases in volume. In learning curves, unit cost decreases by a fixed percentage with each fixed percentage increase in quantity. This suggests that other business data which do not lend themselves to constant ratio analysis might be resolved by similar treatment. One such type of data is fixed assets, or plant and equipment.

Evaluating Plant and Equipment Investment

With the launching of each new expansion program, the executives contemplating the expansion are inevitably faced with the elusive and critical question: "Are our plans going to provide facilities that will be adequate to handle predicted production requirements; or are we going to be faced with excess space and machinery?" The larger an organization and the greater the decentralization, the more disturbing this question can become, for the decision-maker cannot rely, like an old-time pilot, on the "seat-of-the-pants feel" that guides the small manufacturer. Instead, he must be guided by the advice of his sometimes physically remote specialists, and by comparisons of industry statistics.

It is evident that quantity to be produced, bulk of the individual items, complexity of the end-product, number of shifts to be worked, number of employees, productivity of labor and equipment, and relative cost of labor and equipment are all factors that have a bearing on the requirements for plant and equipment. Other factors, somewhat more subtle in nature—such as the effectiveness of management and support personnel, general business outlook, etc.—also have a bearing on what the needs are for plant and equipment.

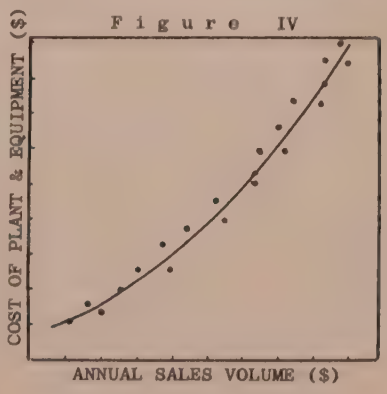
Attempts to relate plant and equipment requirements to any of the above factors or group of factors are certain to be frustrated by the lack of usable information for establishing an index. Even if the information were available, the analysis that would establish relationships might be too complicated for practical use.

However, one readily available index, the sales dollar, gives a fair universal index of all the above factors. Admittedly, a major shortcoming in resolving the basis for determining plant and equipment requirements is that the sales dollar does not give proper "weight" to each of the above factors. Bulky items, for example, may require more plant than an equally expensive small item. This shortcoming may be partly overcome by treating data by industry groups.

In order to test the relationship between sales volume and initial plant and equipment value (before depreciation), a number of companies engaged in assembly were selected for analysis. The selection was not confined to any one industry or asset size, but included manufacturers ranging from office equipment assemblers to automotive assemblers and from $10 million in annual sales to $10 billion. The only restriction was that the plant and equipment be owned by the corporation rather than being provided by the government in the case of defense work. Unadjusted dollar data were used because it was virtually impossible, without the use of internal proprietary information, to deflate plant and equipment values to constant dollars.

The plant and equipment values were plotted on regular graph paper, and the resulting scatter followed a curve as depicted in *Figure IV*. Pursuing Mr. Wright's lead, the same data were plotted on logarithmic grids, resulting in the scatter shown in *Figure V*. For most purposes, a line can be fitted visually to data that are as well defined as those depicted in *Figure V* (coefficient of correlation .99). For those who are statistically minded, several methods may be used for deriving a formula (least squares method, for example) for the line of best fit. Most computers have standard routines to handle a regression analysis of this type and, with slight additional effort, will compute variances, standard error of estimate, correlation coefficients, etc.

Figure IV



Five or six years of data have been included for each company, and almost invariably the amount of plant and equipment employed at any level of sales seems to be increasing with time (the latest year is starred). Only three final points were below the regression line. The use of constant dollars (not attempted here) would probably accentuate this trend. It would be interesting to determine, with more data and experience, if the rate of change in plant and equipment value over time could be related to productivity. Presumably, the impetus to purchase machinery and equipment, in addition to augmenting volume is to reduce rising labor costs by the substitution of labor-saving equipment. While this is popularly referred to as "increased productivity of labor," a more precise term would be "increased productivity of capital."

Figure VI pictures the results of plotting data from the oil industry. Note the closeness of dispersion—i.e., small standard error of estimate (δ). A comparison of this figure with *Figure I* indicates the advantage of making an analysis of this nature along industry lines.

The formula that expresses a straight line on logarithmic paper may be stated as follows:

$$Y = a X^b$$

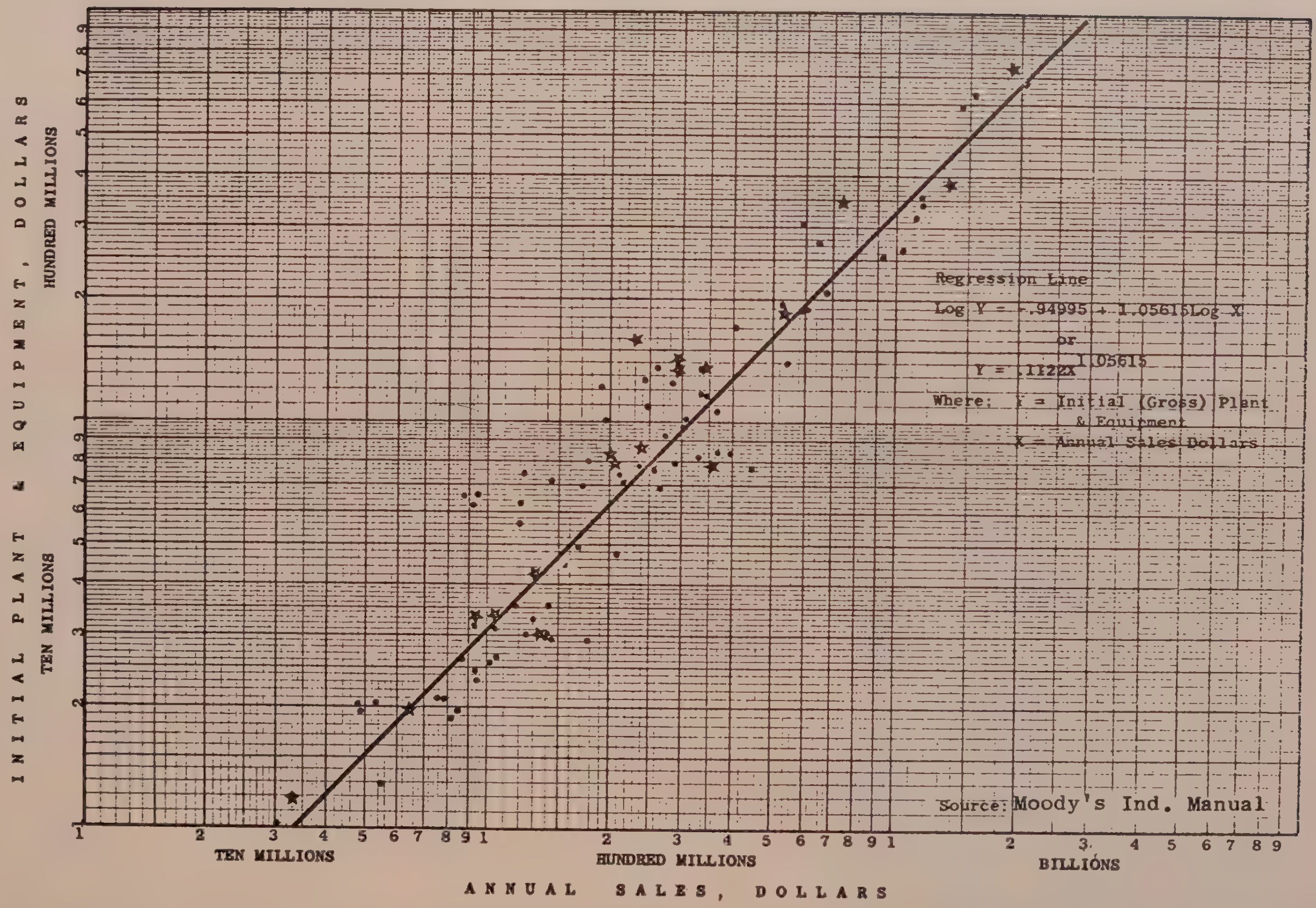
Here Y is considered as the plant and equipment value and X as the annual sales value. In the formula above, if b is greater than 1, Y (plant and equipment) would increase at a greater than proportionate rate than X (volume); if b is less than 1, Y would increase at a decreasing rate.

In an analysis involving over 100

Figure V

INITIAL PLANT & EQUIPMENT vs. ANNUAL SALES

Companies Engaged in Industrial Assembly



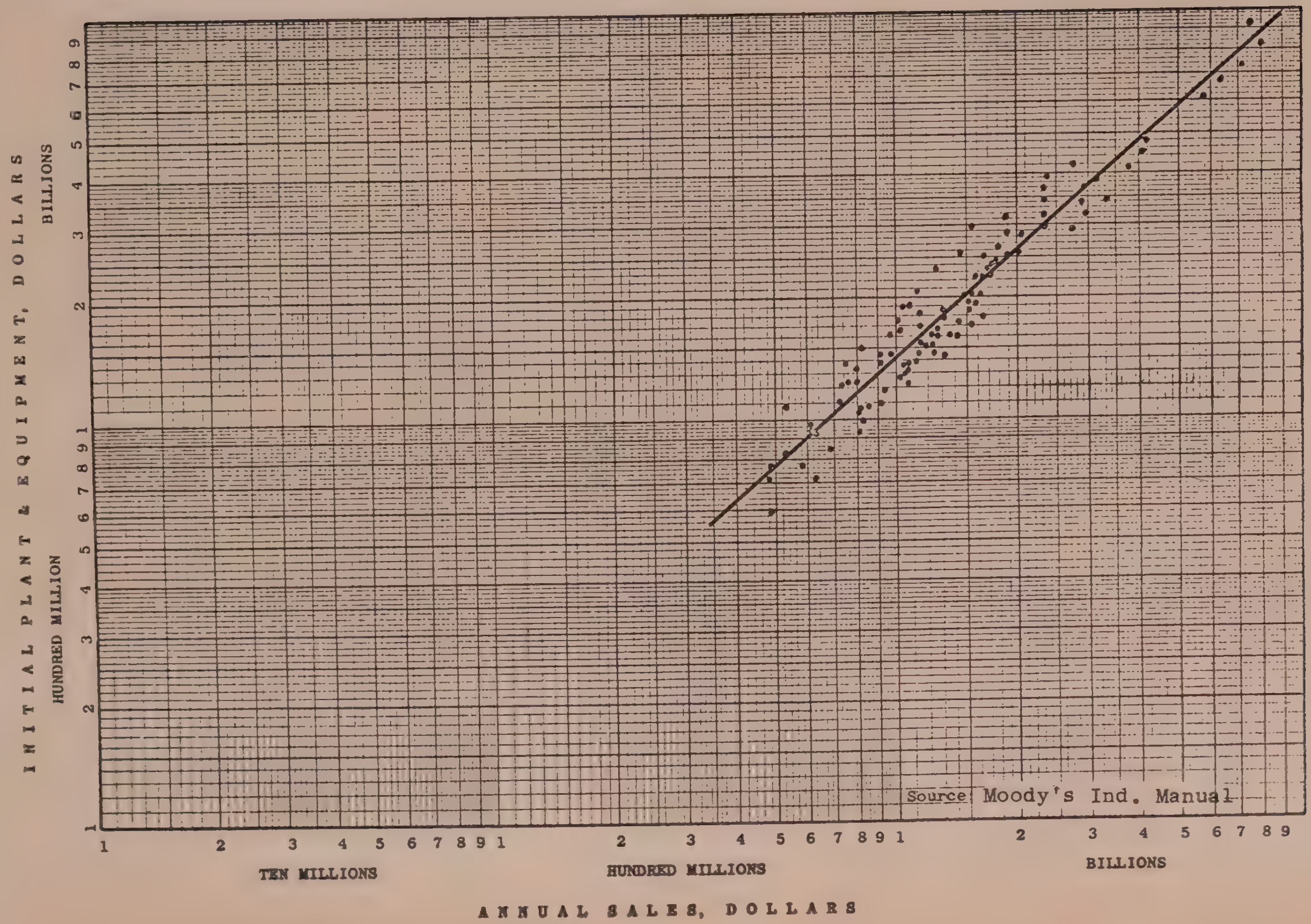
Source: Moody's Ind. Manual

Figure VI

INITIAL PLANT & EQUIPMENT vs. ANNUAL SALES

Oil Industry

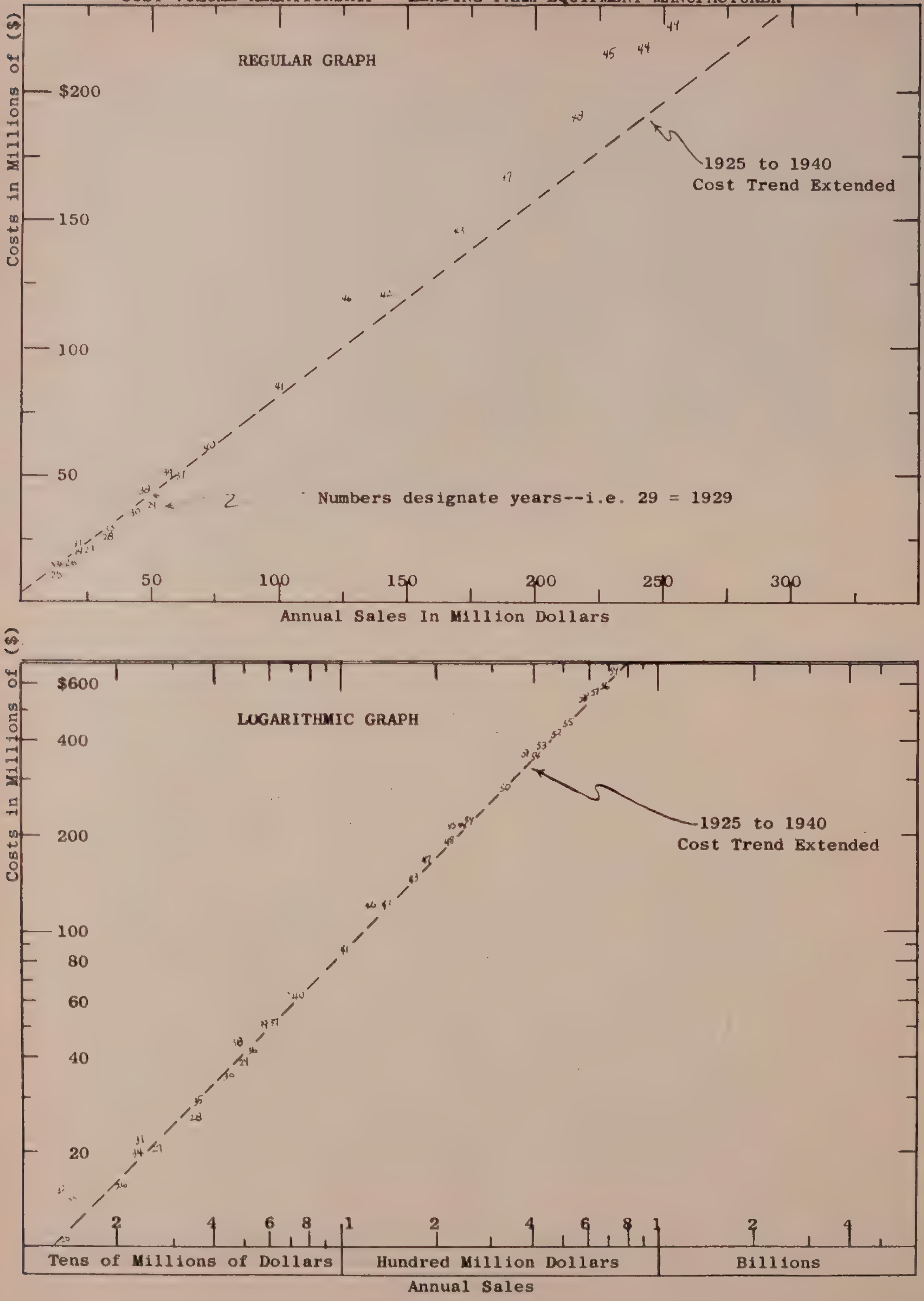
(Small σ)



Source: Moody's Ind. Manual

Figure VIII

COST-VOLUME RELATIONSHIP - LEADING FARM EQUIPMENT MANUFACTURER



companies and 12 industries, both types of formulas were developed, indicating that in some industries the larger companies have a greater requirement for investment per dollar of sales than the smaller companies, while in other industries the reverse is true. All of the b's departed from the value b = 1 (which would have been obtained only if Y was a constant ratio of X). The difference from 1 proved to be significant based on the usual "t" test.

This type of analysis is also applicable in evaluating the book value of plant and equipment (after depreciation) in terms of annual sales, and in estimating floor space requirements. In the case of floor space, the restriction against the use of data from defense plants no longer applies, as both government-provided and privately owned floor space amounts are included in published reports.

Profit Planning

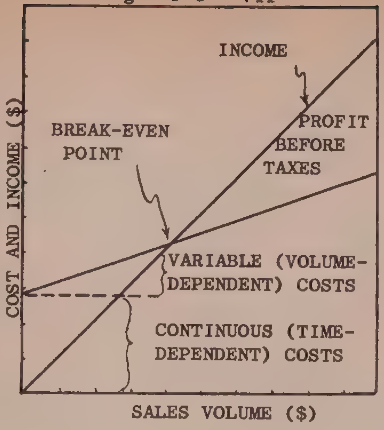
The usual approach to planning profits is to segregate costs into continuous or "fixed" costs (time dependent), and variable costs (volume dependent). This results in the classical cost-income relationship as pictured in *Figure VII*.

Profit planning can reach down to individual account numbers which segregate costs by departments and function and, within these segregations, by continuous and variable costs. Some individuals will recognize this type of planning as flexible or variable budgeting.

The major drawback of the method outlined above is that for a greatly expanding company the concept tends to break down. *Figure VIII* shows the actual experience of the cost to sales relationship for a farm equipment manufacturer over many years. In the upper part of this figure the scatter is plotted on absolute grids and shows the error that would result by extrapolating the 1925 to 1940 cost trend (the numbers designate the year). Yet these same years extended on logarithmic grids would not have resulted in an understatement.

By plotting cost information versus sales of a number of firms, it was observed that the costs tend to follow the same concave-type curve found here. In addition, the advantage of logarithmic grids in handling a wider spread in numerical values with equal relative accuracy is apparent. That is, the years 1949 to 1959 could not be shown in the same space on regular graph paper (although they were shown on logarithmic paper) and yet maintain detail sufficient to show the earlier years.

Figure VII



This is not a criticism of profit planning as it is now practiced, for at this time there is no substitute for the detailed control made possible through a well-installed system. It is suggested, however, that in long-range planning a more realistic and conservative estimate of cost and income may be possible by extrapolating trends on logarithmic paper, and thus allow adjustment of ratios with volume. Further analysis by industry, and within industry by functional account, could lead to more meaningful guidelines in controlling the operating side of industrial finance. It is conceivable that at some future time it will be advisable to shift from the continuous-variable type of profit planning to a variable ratio, logarithmic-based control.

Working Capital

It is probably intuitive with most executives that less working capital is needed proportionately as volume expands. A certain amount of start-up inventory and cash are required at even very low levels of output, but these requirements diminish in relation to output. As might therefore be suspected, this category of financial data also lends itself to the type of analysis described above.

SUMMARY AND CONCLUSION

The use of constant ratios or percentages in the management of a business has the disadvantage of not recognizing certain apparently normal changes in relationships that evolve as a business grows.

Preliminary analysis indicates that one family of simple curves tends to measure relationships that apply to much of the economics of a firm. These relationships can be measured accurately enough to provide guidance in controlling costs, plant and equipment, and working capital investment at all levels of output. Having costs (and thus profits) at all levels of volume, it is possible to determine the amount of cash needed in order to meet the requirements for additional plant and equipment and working capital necessary to expand volume.

In this age of revolutionary advance in technology, it is time to shed the use of the constant ratios and to make use of the dynamics of variable ratios. Such a course promises to result in a more realistic foundation for cost control and forecasting, capital requirement estimating and evaluation, analysis of return on investment, diversification planning, productivity analysis, and investigations of other financial and economic factors.

MINNEAPOLIS GAS COMPANY
739 Marquette Avenue
Minneapolis 2, Minnesota

Common Stock Dividend

The Board of Directors of Minneapolis Gas Company, at a meeting held on October 12, 1961, declared a dividend of 40 cents per share payable in cash on November 10, 1961, to common stockholders of record as of the close of business October 27, 1961.

G. T. MULLIN, President

SIZE 15 SHOES

...FOR TIP-TOEING
TWENTY TONS
THROUGH
TRAFFIC

New Rockwell-Standard *STOPMASTER* Brake

The trend towards increased vehicle weight, horsepower and axle loading is demanding better truck brakes and brake systems . . . new standards for better vehicle control, greater safety and dependability.

Now comes the new Rockwell-Standard Stopmaster—an entirely new concept in brakes—to meet these demands and fulfill the truck industry's need for a more efficient, more dependable brake. Exhaustive road and laboratory tests have proven the superiority and extraordinary features of this brake. They include: cooler operating temperatures, longer drum and lining life, less weight, faster, surer stops, less maintenance.

The remarkable new Stopmaster Brake is another outstanding product of Rockwell-Standard engineering, research and development . . . another contribution to the fields Rockwell-Standard serves so well—*transportation, construction, agriculture, petroleum, general industry* and *government*.

22 U.S. plants of Rockwell-Standard Corporation manufacture these famous products • TIMKEN-DETROIT® AXLES • HYDRA-DRIVE® TRANSMISSIONS • GARY® GRATING • BLOOD BROTHERS® UNIVERSAL JOINTS • BOSSERT® STAMPINGS • AERO COMMANDER® AIRCRAFT • AIR-MAZE® FILTERS • KERRIGAN® LIGHTING STANDARDS. Plus these other Rockwell-Standard® products: AUTOMOTIVE BUMPERS • AUTOMOTIVE SEATING LEAF AND COIL SPRINGS • BRAKES • FORGINGS

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GENERAL OFFICES: CORAOPOLIS, PENNSYLVANIA

PROGRAMMED TEACHING

by Tadeusz Kozlowski

Still in its formative and developmental, rather than commercial stages, the new educational method of programmed teaching is definitely here to stay and appears destined to make progress that could well go beyond the fondest dreams of its originators. That this might take place in jumps rather than steps, is suggested by the fact that, although it is still largely unknown to the general public, the new technique is already in successful use at schools, in commerce, in industry and in defense establishments.

The tools of programmed teaching are thus already being translated into commercial services and products, around which an entire industry is just coming into being and significant sales and profits should not be too long in coming. This anticipation is already a proper and important investment consideration in the companies involved.

The Teaching-Learning Process: Since programmed teaching was created by psychologists through studies of human capabilities for acquiring knowledge, it is impossible to attempt a proper evaluation of this new method without some understanding of the teaching-learning process. Stated briefly in non-technical language, teaching may be defined as conveying information to people, or communicating between the known and the unknown, through whatever means are available.

Teaching presupposes the existence of a reservoir of knowledge or information, out of which specific items are usually selected to form a course, and arranged in a logical sequence before they are offered to the students. It also involves the closely related tests and examinations, designed to measure the degree of student's absorption and retention, as well as his ability to put the acquired knowledge to a creative use, i.e., his powers of original thinking.

It might be noted here that the weakness of testing, before and after the course, could be compared to the drawing up of comparative balance sheets of a business which measure its assets at two dates without providing any indication as to how the total has changed in the intervening period. In business, this information is provided by the revenue statement; in education, however, the process of learning could thus far be only superficially observed. To be effective, teaching must be adjusted, as much as possible, to the student's ability to learn, as determined by his innate psychobiological powers.

In this area, although educational psychologists seem to agree on the main phases of the learning process, such as the student's recognition of information presented to him, his absorption, retention and eventual use of knowledge, they differ widely in the ways in which the process takes place. The basic dispute seems to turn around the question which—in the layman's terms—could be stated as to whether man learns more like a human or an animal. Proponents of the "human" theory say that people absorb information through a mental effort, consciously retain it in their memory, and then use it for creative thinking. Advocates of the "animal" approach say that most outside stimuli, including educational information, are absorbed impulsively, retained subconsciously, and used in the form of instinctive reflexes with little mental participation.

In view of successful experiments in the use of both approaches involving humans, and in certain cases, also mice and pigeons, there is reason to believe that both have merit, depending on the student's intellectual level.

In the Beginning Was the Word: The oldest means of communicating knowledge, or teaching, is by the word of mouth. As used by Socrates (the first full-time teacher known to history) this method was no more than just thinking aloud without any prior preparation of the material and little regard to the learning facilities of the student. These elements were aided by the book—the first major educational tool supplementing the teacher—which necessitated an orderly selection and arrangement of the material. Then came additional aids, such as the experimental laboratory for the study of physics and chemistry, and audio-visual equipment in the form of film projectors, slides and tape recorders.

Need of an Additional Teaching Tool: Since all of these existing tools are just supplements to the teacher, the teacher's availability and sometimes qualifications became serious limitations of the total educational effort. Particularly with the advance of modern sciences and their mass application in consumer, industrial and defense products, the need for more and better school education, and for business, industrial and military training, has by far surpassed the available capability of teachers and instructors and promises to become

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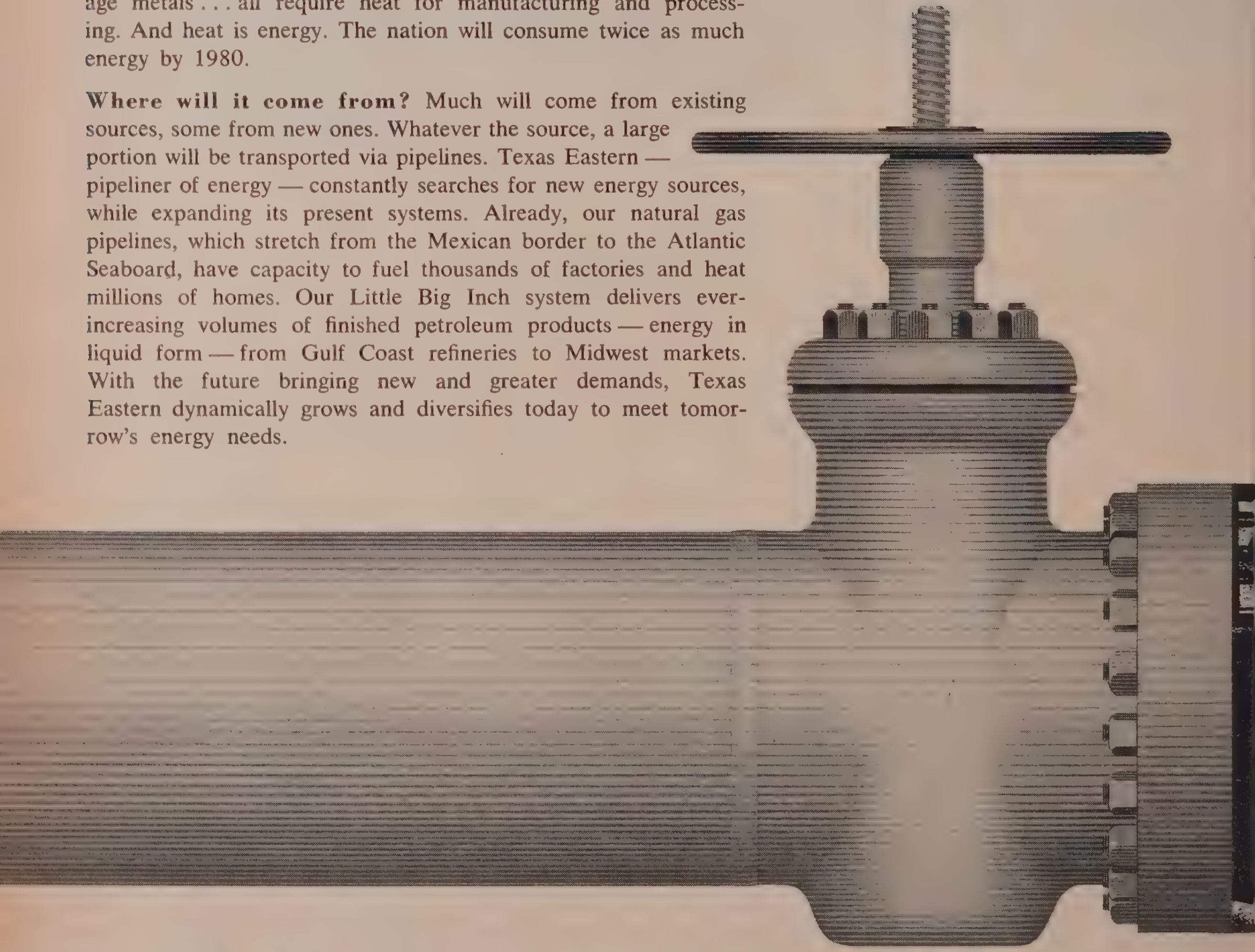
Tadeusz Kozlowski, assistant director of research at A. M. Kidder & Co., Inc., has worked as a Financial Analyst in both New York and London. A graduate of the University of London, Mr. Kozlowski lectures on matters dealing with investments.

Forecast for energy:

America's industries will demand twice as much energy by 1980

Industrial research has spawned a list of new products that's almost endless, with more on the way. For instance, output of synthetic materials — including fibers, plastics, rubber — has tripled in the past ten years. New uses for steel and aluminum . . . new space age metals . . . all require heat for manufacturing and processing. And heat is energy. The nation will consume twice as much energy by 1980.

Where will it come from? Much will come from existing sources, some from new ones. Whatever the source, a large portion will be transported via pipelines. Texas Eastern — pipeliner of energy — constantly searches for new energy sources, while expanding its present systems. Already, our natural gas pipelines, which stretch from the Mexican border to the Atlantic Seaboard, have capacity to fuel thousands of factories and heat millions of homes. Our Little Big Inch system delivers ever-increasing volumes of finished petroleum products — energy in liquid form — from Gulf Coast refineries to Midwest markets. With the future bringing new and greater demands, Texas Eastern dynamically grows and diversifies today to meet tomorrow's energy needs.



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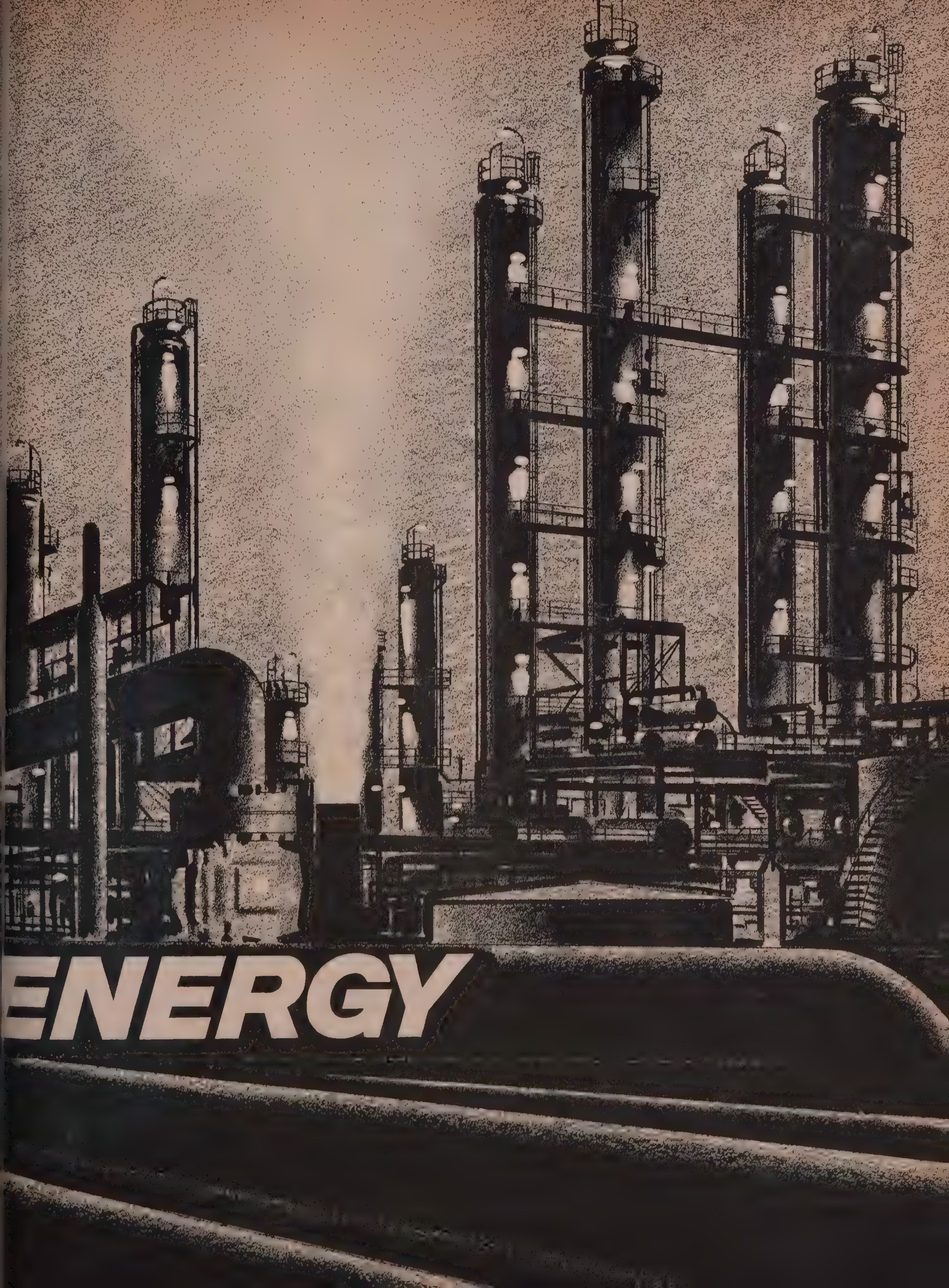
ENERGY

more severe with the passage of time. This deficiency was first realized in teaching foreign languages in which, due to past neglect, the shortage of adequately qualified teachers became most glaring. Even in the less typical areas, however, most U. S. schools are estimated to be understaffed by at least 10% to 15%, with the shortage becoming more acute.

Recognizing the situation, some schools started experiments with language laboratories with all types of electronic equipment aiding the teacher. A gradual modification of this method, reinforced by the latest break-throughs in learning psychology, and its application to other subjects produced startling results, first in conventional teaching and then in commerce, industry and military programs. Applied to practical problems in all those fields, the new tools have proved that their impact goes far beyond the school and even beyond commerce and industry, reaching out to the consumer at home and at play in the form of microfilm recipe libraries, TutorTexts for contract bridge, or "programmed" music sheets.

Evidence of this potential is the recognition the new teaching tools received in the National Defense Education Act of 1958 which allocated $50 million for four years (to be matched by local funds) for teaching equipment, and the latest higher education bill providing grants for classroom and laboratory construction, as well as earlier grants by both Ford and Carnegie Foundations.

Programmed Teaching: Basically, this new educational method is the first serious attempt to adjust teaching to the student's powers of learning and remembering, whether they be mental or impulsive, conscious or subconscious, creative or repetitive. To achieve this, the technique concerns itself with two major tasks: (a) new ways of preorganizing material, or programming; and (b) new tools of communicating the programmed text to the student, mainly in the form of teaching machines and devices.

Current practice of programmed teaching, which has already been fairly extensively and successfully tested, embraces several different approaches developed by the chief exponents of the various theories. However, they are all based on the requirement that the text material should be broken down into very small, easily absorbed segments, and that the method of their presentation should allow immediate questioning and correction after each segment to ensure its full mastery before allowing the learner to proceed to the next part of the program. This principle was first applied in mid-1920's by Dr. Sidney L. Pressey (now professor emeritus of the Ohio State University) who devised programs in which every segment of the text was followed by a question and several answers, of which only one was correct. This multiple choice technique was somewhat similar to the one used by *Reader's Digest* in "It Pays to Increase Your Word Power."

Skinner vs. Crowder: The more recent refinements of the theory depend on the interpretation of the man's powers of learning. Dr. B. Frederick Skinner, professor of psychology at Harvard University, has taken the view that human learning is largely animal-like. He started his experiments with mice and pigeons by offering them different choices of action, with one correct response immediately rewarded with food. He found that it was only a matter of time before they began responding only in the desired way. Applying this to people on the theory of behaviorism (that all behavior, human or animal, reasoned and instinctive, is a series of psychological responses to environmental stimuli), Dr. Skinner devised teaching programs which divide the text material into the largest possible number of segments (several thousands for a single course), each of which is so simple that it can be absorbed almost on the animal level.

By requiring a minimum of mental effort, this makes it almost impossible for the student to give a wrong answer to the question that follows, showing him almost always right. This, according to Dr. Skinner, is the reward for the student which keeps him interested and happy and has a psychological value of reinforcing what he has just learned. Thus, although this method aims at a near-automatic response, Dr. Skinner claims that a good program can teach the student original thinking.

Taking the more "humanistic" view is Dr. Norman Crowder, who relies more heavily on the student's mental powers. His programs present the material in larger chunks, requiring some thinking for absorption. Then, applying a conceptual approach, they anticipate errors by asking a multiple choice question. If the student's answer is correct, he is allowed to proceed to the next piece of material. But if he is wrong, he is immediately referred to another part of the program which explains the error and then returns him to the original question. In this way, the program performs the role of a private tutor who, with infinite patience and proceeding at the student's own pace, can take him through the tutoring sequence and enable him to earn the equivalent of an A grade in the course.

Program Presentation: Since under all methods the program consists of a large number of clearly separated steps, it yields itself ideally to mechanized presentation. The simplest method is to use a book or loose leaf form with a separate page or card allotted to each step. But because of certain important limitations of this method, such as the possibility of cheating or jumping ahead without proper absorption of the intervening material that breaks the desired logical sequence, it is often desirable to use some mechanical device that would compel the students to follow the prescribed procedure.

At least one type of book presentation developed by Dr. Crowder attempts this dual book-machine effect by being written in a scrambled form. These books, known as TutorTexts, present on one page a piece of material, followed by a multiple choice question, with each question referring the student to a different page—not in consecutive order—on which he is either told that his answer is right and he is given the number of the page on which to find the next piece of material, or that he is wrong, followed by a full explanation of the error and a reference back to the original problem.

Self-Programming: Another teaching method which uses the Skinner reflex approach but requires different programming and presentation, was developed by Dr. Gordon Pask in England. Unlike machines developed in the U. S., to handle programs following a single logical sequence, the Pask device is designed to adapt itself to the student's performance. It first makes several trial moves by different presentations and questions, and then, depending on the student's individual response, adopts one of many possible approaches and a specific training sequence. This "self-organizing" system, claimed to eliminate inflexibility, continues adjusting itself throughout the course in an effort to maintain constant "understanding" with the student.

So far, the Pask device has been tried for teaching simple repetitive skills such as typewriting and keypunch operations, in which it has reportedly cut the training time by around 80%.

The Language Laboratory: The teaching of languages was the first example of successful mechanization. Making use of phonographs, tape recorders and duplicators, dual-language recorders and a full array of additional audio equipment, the language lab already exists on a large scale. A typical facility represents a classroom divided into small booths, one for each student. The teacher's console allows him to speak to the students, individually or as a class, and to listen to their responses, or to plug the whole system into a pre-recorded course which carries on the teaching routine in much the same way in which an automatic pilot guides a plane.

The teacher is then freed to devote individualized attention to the students' progress. Refinements include tape recorders and analyzers for every student, enabling him to hear his own pronunciation and to compare it with the master's. The system's only weakness is that, so far, it has given little attention to proper programming of texts, relying mostly on electronic equipment and conventional books.

Teaching Machines Applications: The largest areas of application, embracing the greatest number, are the schools (47 million pupils) and adult training programs, both commercial and Governmental (largest employer), civilian and military. For economic reasons, the numerically largest school market will probably be best for mass-marketed texts and relatively simple, low-cost devices, whereas the industrial and Government needs may be served better by more complicated, often tailor-designed books and machines, not only for personnel training, but also for extensive functional services for both internal and customers' uses. Aside from these, the teaching machine is already proving a unique tool for certain areas of research and for programming itself.

School Teaching: Some of the most efficient ways of presenting a programming course to the student are offered by mechanical aids. The simplest of these are no more than plastic masking devices which, like an ordinary sheet of paper, can be used to cover the correct answer until the student has had a chance to make his choice. Such devices, however, seem to lack several unique and necessary features supplied by the more complicated machines. These usually employ the feeding of course material and questions, on paper or microfilm (including motion sequences), through a peep hole window and provide for push-button responses or written answers on separate tape. The machine, having presented a single portion of a course of training, examines the student and requires him to demonstrate understanding before allowing him to pass on to the next point. In addition, it may keep a full record of the time consumed and the number of errors, and otherwise analyze the quality of the student's work. This not only assures full mastery of the subject by the time the course is completed, but also enables the teacher or the personnel manager to analyze learning ability, aptitude and knowledge much better than existing examinations can.

Such quality analysis shows clearly whether the person taking the course has the prerequisite qualifications and if he is fast or slow, error-prone or accurate.

Teaching machines assure active participation of every student in the class, a condition seldom obtained in the classroom. His learning is completely self-paced so that he can proceed as slowly or as rapidly as his ability permits. It creates motivation to learn, resulting from the continued understanding and success built into the program. The teacher, on the other hand, relieved from repetitives routines, can devote more of his time to instilling creative and critical thinking skills.

Most important, however, is that in actual comparative experiments, programmed teaching with machines enabled students to complete a course in much shorter time and absorb and retain material more effectively. These findings are of extreme importance to its future growth since they point at adequate cost savings in terms of teachers' time and school equipment to pay for the machines. Thus, aside from obvious benefits derived by the student, it can be reasonably expected that programmed teaching will also prove acceptable on an economic basis.

Commerce, Industry and Government: Aids ranging from scrambled service, operational and maintenance manuals to most complicated machines, have been found very effective in numerous practical applications outside conventional education. They are used for sales training, quality control and inspection, assembly instructions and as aids for servicemen and troubleshooters. The most important is probably personnel training, a major problem facing every employer. Due to the increasing complexity of business, industrial and defense equipment and procedures, and the need for retraining unskilled personnel displaced by automation, just underscored by the establishment of an Office of Automation and Manpower within the Department of Labor, the current instructor shortage in these areas probably exceeds that in schools by a large margin. Economic waste, due to poorly trained personnel and low utilization of fully skilled members of staff plagued with training functions, cannot be measured, but is said to be appalling. Testifying to this is the keen and active interest that some of the largest and best managed corporations, such as IBM, Bell Laboratories and Eastman Kodak, as well as the Air Force, which usually leads the armed services in personnel training, have displayed in programmed teaching. They have all reported it extremely promising in actual use.

Research: In addition, teaching machines can be used for psychological studies of the learning process itself. By keeping a complete behavioral record of the learner, they provide an effective test of communication techniques through which knowledge is gained. For the first time, through a dynamic test of the processes, they may eventually help to fill the gap in human psychology. Drawing on the business parallel, they may enable educators to draw up a learning "revenue statement" which will show how people accumulate knowledge now measured only in a "balance sheet" fashion through examinations at a few selected points in the course of study.

Some Problems and Controversies: As is normal with any new development of social, scientific and economic significance of such magnitude, teaching is not free from problems. One of the most important is public acceptance, not only by students and persons undergoing training, but by the society as a whole. So far, the responses of parents and educational editors in the areas where large-scale experiments were undertaken, have been extremely gratifying.

Similarly, the teachers, who might see in programmed teaching a rival, in the conventional sense of automation putting people out of jobs, have not betrayed any signs of anxiety. Another problem, that of good program writing, seems no different from that posed by conventional texts, although the programs seem to have the advantage of built-in factors inducing and facilitating improvements as machines bring out their weaknesses. Furthermore, because of machines, good programs are likely to reach more students than do ordinary texts. They can be of particular help to schools suffering from a shortage of fully qualified teachers.

Of investment importance is the Skinner vs. Crowder controversy over the merits of reflex learning vs. rational mastery, because some of the companies engaged in the field are already committed to one of these methods to a substantial degree. Recently, however, both the theorists and the industry appear to have broadened their approach, a tacit admission that the dispute is not really fundamental.

The Programmed Teaching "Industry": In an effort to enable practical applications of the new educational theory, the first programs and presentation devices were developed by the educational psychologists who created the concept of programmed teaching. They were aided by a few interested companies active in the field of electronics, films and projectors, tape recording, optics and information technology. Then, as these efforts resulted in the development of products ready for testing and marketing, programmed teaching was entered by several publishing companies which undertook the printing and distribution of programs and, in at least one instance, began marketing the machine itself.

Broadly speaking, the industry's products are geared roughly to the two teaching techniques: the Skinner reflex method, best suited to basic school teaching and training of unskilled adults for simple repetitive functions, and the conceptual Crowder method, better suited for advanced studies and the more complicated business, industrial and military training programs. To provide for the broadest coverage of the field, some of the psychologists, educational writers, machine manufacturers and publishers have entered into formal arrangements, while others have, from time to time, cooperated on an informal basis.

The industry's nucleus is probably represented by Dr. Skinner, along with two of the earliest followers of his method, Harcourt, Brace & World, Inc., the publisher of Skinnerian programs, and the Califone Division of Rheem Manufacturing, which has an extensive background in audio equipment for language laboratories and now makes Skinnerian presentation devices, such as the Didak teaching machine.

In addition, Rheem has an English subsidiary, Solartron-Rheem Ltd., specializing in devices based on the principles developed by Dr. Pask. Although both Harcourt, Brace and Rheem cooperated with Dr. Skinner at different times and are generally identified with his approach, they operate completely independently of one another.

By contrast, the second industry group is quite closely connected. It consists of U. S. Industries, Inc., which employs Dr. Crowder (formerly at Air Force Schools) and several associates at its Western Design and Electronics Division, maker of the advanced AutoTutor machine.

It also has an agreement with Doubleday, publisher of its TutorTexts. Under this arrangement, U. S. Industries not only makes a profit on the manufacture of machines, but also retains copyrights to its programs and receives royalties on their sales.

The third team, quite recently organized, is represented by Grollier, Inc., publisher of encyclopedias with a large door-to-door sales force, and Teaching Machines, Inc., a privately held company organized a little over a year ago to prepare programs and design presentation devices which makes the low-priced Min-Max machine for school children.

Another arrangement has just been concluded between Prentice-Hall, Inc. and Litton Industries, Inc., whereby they agreed to develop and market programs and teaching machines.

Substantial work has also been undertaken by Itek Corp., which, by virtue of its leading position in information technology, is in an exceptional position to combine programmed teaching with its activities in information storage and retrieval which provide a natu-

Merger with Pemco Corp. enables Glidden to offer a full line of coatings materials.

Purchase of one-third interest in West German paint company provides first direct entry into European Common Market.

GLIDDEN REPORTS for 1961

Acquisition of Johnstown, Pa., plant complements present operation, offers full line of metal powders to industry.

FINANCIAL HIGHLIGHTS FROM THE GLIDDEN COMPANY 1961 ANNUAL REPORT

	1961
Net sales	$206,702,216
Income before taxes	$ 12,737,983
Net income	$ 6,416,983
Per share	$2.78
Dividends	$ 4,621,743
Per share	$2.00
Depreciation and amortization	$ 7,440,940
Per share	$3.22
Expenditures for plant and equipment	$ 7,823,199
Working capital	$ 68,061,010
Current ratio	5.43 to 1
Shareholders' equity	$ 94,665,592
Per share	$40.96
Number of shareholders	20,873
Number of employees	6,372

New Carrollton, Texas coatings plant will serve growing Southwestern markets.

Capacities increased at Chicago, Louisville and Berkeley edible oil refineries.

For a copy of Glidden's 1961 Annual Report write:

THE GLIDDEN COMPANY
UNION COMMERCE BUILDING
Cleveland 14, Ohio

ral base for programming and present an extremely promising field.

Cenco Instruments, already important in scientific equipment for educational purposes, with an established distribution network in this field, is also engaged in the development of a teaching machine. In addition, it is actively seeking entrance into textbook publishing through merger, which, if consummated, would enable it to offer a completely packaged automated teaching program.

Other Participants: In addition, there are several companies, mostly large in size, which are known to have substantial interest in the field. Among the equipment manufacturers, Thompson Ramo Woolridge is strong in language laboratory equipment, while other teaching aids are made and marketed by Programmed Teaching Aids, Inc. and Dyna-Slide Co., both privately held. Among actively interested publishers are McGraw-Hill Publishing and D. C. Heath and Co. Similarly, Viewlex, Inc., primarily in slide projectors, viewers and camera equipment, is now working on remedial reading devices and testing machines.

Most recent and probably the largest entry is General Electric, which has just established an education technology and product project to study opportunities in teaching machines, language and learning laboratories, school communication systems, educational business machines, education TV and radio equipment and programmed materials.

Less ambitious projects, usually centering on some particular presentation device or technique, often tailor-made for specific internal needs, are operated by IBM, General Dynamics, Bell Telephone Laboratories, Eastman-Kodak, Polaroid, Hughes Aircraft, Minneapolis-Honey, Bendix Aviation and McGraw-Edison.

Current and Potential Profits: None of the companies representing this "industry" derives substantial sales or profits from its participation as yet. Even the early entrants, usually medium-sized to relatively small companies to which programmed teaching is of relatively greater importance, may have derived no more than 2% of last year's sales from machines and programs, so that conventional statistical comparisons would be meaningless. But the situation is changing rapidly and they expect to boost their volume several times over by this year and next. Beyond the immediate sales of teaching machines, perhaps the major source of growing and well assured profits will be in copyrights and royalties on the sale of programs.

At present, companies most likely to benefit are those which embrace both manufacturing and program writing, or which can combine their programmed teaching effort with existing lines in some special way so as to improve their overall standing.

For

Christmas and the New Year

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How'd you like 20,000 bosses?

I like it great . . . especially with them giving me so much reason to "blow my horns" about how our railway is moving ahead!

This is Rocky speaking. I work for all the people at Great Northern Railway. (You'll still see a lot of me in Glacier National Park, my original home. But my greatest claim to fame is being part of GN's trademark.)

Anyway, the view from my mountain top gets better all the time—because *this* railway is way ahead of the game, right up and down its 8,280 mile line in ten states and two Canadian provinces. And I know. I ride on GN locomotives, freight cars and trucks. I'm on train schedules and travel folders—maps, calendars and letterheads. And I even have speaking parts in advertisements like this.

So let me tell you about what's making Great Northern so *great* these days. (And I notice we're at the first picture already!)

You know what this is—a shipment of new automobiles.

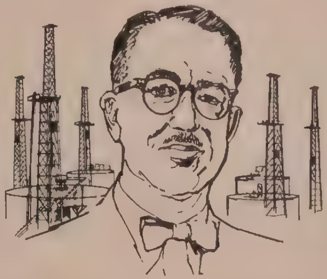
For many years Great Northern—and lots of other railways—hauled fewer and fewer automobiles. But there's been a change. You should see us now. We load up to 15 autos on tri-level carriers—sort of piggyback—and away we roll!

And GN's schedules get those new cars to their destinations in a hurry.

Which gets me into a favorite subject: Great Northern's Coordinated Shipping Services. That's "train talk" for the way we team up freight car, truck and piggyback.

For example: ship some goods into Minnesota or Montana by freight car. Then Great Northern trucks will take over for delivery to outlying points. Or use a combination of piggyback and truck.

Whatever you ship (from perishables to pig iron) . . . wherever you ship (from the Great Lakes to the great Pacific Northwest) . . . however you ship (LCL, carload or trailerload) . . . Great Northern's Coordinated Shipping Services put you on the *right track.* And—at mighty advantageous rates! Check with your local GN freight representative.

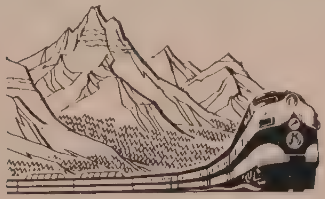


Want you to meet a good friend of mine—Al Haley.

Al's our chief on geological affairs . . . an expert on things like lignite, oil and iron ore.

He's a regular genius at finding a gravel pit where no one thinks there's one around. And you should hear his talk on the Williston Basin chemical complex. ("Complex"? No—just crystal clear!)

Ask Al Haley about sulfur, or natural gas, or olivine—anything that comes out of the ground. (Same address as mine. See below.)



How about your next business trip—or family vacation?

Be a great time to rediscover the joys of train travel aboard GN's incomparable Empire Builder. The sight-seeing's superb from high-up in Great Dome seats. And so is the comfort—in reclining, leg-rest coach seats or spacious Pullman quarters. Marvelous food and service, too. Runs daily each way between Chicago and Seattle-Portland via St. Paul-Minneapolis and Spokane. A *great* way to go!

What is an apple?

It's what small boys shinny up trees after . . . and when one fell down on an Englishman's head several centuries ago, it led to Newton's law of gravity and a new age in science. It tells teacher she's "favorite" . . . and its blossoms tell poets and songwriters and young lovers it's Spring.

An apple is cider, sauce, butter, dumplings, pie and pan dowdy . . . and about 90 calories. It gets bartered for, begged for and bobbed for . . . sliced, diced, sealed, peeled and "polished". It gets cooked, candied and carameled . . . but mostly, just plain chawed and chomped on. It goes into bushel baskets and picnic baskets . . . lunch boxes, sacks and fruit stand racks . . . and into policemen's pockets. It keeps the doctor away . . . and brings kids in from play . . . and shows up in their cheeks.

An apple is as old as Adam . . . yet it's always news when "crop's in". And when it's the Wenatchee Valley crop, that's *exciting* news . . . to the whole apple-lovin' world!

The above is presented in behalf of some of Great Northern's favorite folks—the apple-growers in Washington's famed Wenatchee Valley. This year's crop is in (and it's a beauty!)—and we're busy movin' it to market with the help of 200 new mechanical refrigerated cars. Have the Missus bring home a crate of these big Delicious apples from your food store.

Final "toots" on Rocky's horns

Looks like I've just about "enthused" myself out of space! But I've got to put in a plug for our brand new steel boxcars. We add around 1,000 or more every year—and build a lot of them ourselves in GN's shops at St. Cloud, Minnesota. (Some of our new special-purpose cars are real dandies, too—like those tri-level auto carriers and mechanical refrigerator cars I mentioned. And boy, the way our new "plug door" boxcars team up with mechanical loading equipment is something to behold if you're speed and efficiency-minded!)

You should see the big increases in miles of our line under CTC (Centralized Traffic Control), too. And how we use an electronic pushbutton system to cut terminal time by classifying up to 3,600 cars a day at our Gavin Yard in Minot, North Dakota.

But maybe it's better that I invite you to get in touch with us!

If it's a matter of freight . . . talk to *G. D. Johnson, General Freight Traffic Manager*—or offices in most major cities.

If it's industrial or agricultural opportunities out our way, drop a line to *E. N. Duncan, Director, Industrial and Agricultural Development Department.*

If it's passenger travel, contact *Kent Van Wyck, Passenger Traffic Manager*—or ticket offices in most major cities.

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GREAT NORTHERN RAILWAY

World's first nuclear-powered commercial vessel, N. S. Savannah, to be lubricated by Texaco. States Marine Lines, operators of the vessel after her commissioning early in 1962, have awarded the lubrication contract to Texaco—and for good reason. Extensive study of the Savannah's lubrication demands was conducted by Texaco's million-dollar radiation laboratory—the most fully-equipped, privately-financed research facility of its kind in the oil industry. These studies proved the ability of Texaco Marine Lubricants to withstand radiation. Striking evidence of Texaco product performance. this is also evidence of Texaco's many diversified investments in providing oil for energy for the Free World.

TEXACO: SYMBOL OF WORLD-WIDE PROGRESS THROUGH PETROLEUM

Dr. T. K. Callister took his degree in medicine after being in business for several years. He is now with the Department of Health, Education and Welfare (Public Health Service) in Washington, D. C. Dr. Callister has lectured on investments at the University of California at Los Angeles.

Central Value and P-E Estimation —A Formula Approach

by T. K. Callister

THE CRUCIAL PHASE OF SECURITY EVALUATION is in selection of the price-earnings multiplier. A developing thin supply of good-grade equities, and an increasing need to carefully appraise the growth factor, suggest this problem of the P-E multiplier is not to become easier.

Past-applied techniques in arriving at rational multipliers have been chiefly based upon relative value or vague historical precedent, and have been highly affected by the coloration of near-term optimism or pessimism. The erratic behaviour of P-E multipliers in the past demonstrates the inadequacy of these non-objective approaches. A search for a superior analytical and objective technique occasions this presentation of a mathematical formula approach.

A mathematical formula approach to estimating proper P-E multipliers has theoretical justification. Price is a reflection of earnings and earnings outlook. Earnings outlook is related to time, amount and growth of base capital, and the rate at which capital may be profitably employed. And as long as stock investment remains an optional decision, stock price-earning multipliers should be related to existing money rates.

The many factors expressed in the foregoing may be combined to fit a rational and suitable mathematical formula.

Such a formula stems from the basic assumption that a proper P-E multiplier for a stock should be one that affords a future return of stock principal and interim dividends equal to bond principal and interim yield on U. S. Government obligations. Such a multiplier assumes the possibility of superior stock performance to be offset by the additional risk incurred.

In equational terms this may be expressed as:

Bond Principal + Yield Return over time (t) =
Net stock principal realized
+
Dividend Return over time (t).

Stated in terms of variables, this formula becomes:

$$P_o + P_o\,(t)\,(y) = P_{nt} + \frac{t\,(DDR\,(E_o + E_t))}{2} \quad \text{where:}$$

P_o = the initial purchase price in bond and stock;
t = the length of time during which variables are assumed to hold true;
y = the yield rate for U. S. Govt. bonds of (t) maturity;
P_{nt} = the net after capital-gains tax proceeds from sale of stock of initial purchase price (P_o);
DDR = the future average dividend disbursement rate assumed;
E_o = the adjusted current stock earnings on P_o stock purchase;
E_t = the estimated future stock earnings at end of time (t);

For a moderate period of future years, none of the above variables are beyond rational estimate, other than the "equating variables" of P_{nt} and E_t.

P_{nt} is the same as sale price (P_t) of time (t) less that proportion deducted for capital-gains tax (CGT). $P_{nt} = (P_t - (P_t\text{-}P_o)\ (CGT))$ then, where CGT is the "effective" capital-gains tax in percent on top-bracket personal income. Percent "effective" capital-gains tax is assumed to be one-half of the top-bracket personal income tax of the individual investor.

E_t, the other "equating variable" may be formulated as follows:

$$E_t = ((1.0 + (PB)\ (RCI))^t\,(RCI)\ (BNA)) \quad \text{where:}$$

PB = the percent net earnings ploughed back;
RCI = the net rate earned, after corporate-tax, on book net assets;
t = the time interval in years;
BNA = the book net assets;

As P_t may be expressed as $P_t/E_t\ (E_t)$, the basic formula is restated as:

$$P_o + P_o\,(t)\,(y) = \left(\frac{P_t}{E_t}\right)((1.0 + (PB)\ (RCI))^t\,(RCI)\ (BNA))$$

$$\text{minus}$$

$$\left\{\left\{\left(\frac{P_t}{E_t}\right)((1.0 + (PB)\ (RCI))^t\,(RCI)\ (BNA))\right] - P_o\right]\quad (CGT)$$

$$\text{plus}$$

$$(t)\ (DDR)\ \frac{[E_o + ((1.0 + (PB)(RCI))^t\,(RCI)\ (BNA))]}{2}$$

The known factors of the above equation are:

P_o = purchase price invested in bond and stock (or the stock index level);
t = years of assumed validity of all factors;
y = U. S. Govt. Bond yield to maturity (t);
BNA = current book net assets of stock (or of stock index);

The rationally assumed factors are:

PB = percent ploughback of earnings anticipated over time (t);
DDR = percent dividend disbursement anticipated over time (t);
RCI = percent net after corporate-tax anticipated on book net assets;
CGT = percent "effective" capital-gains tax;

The formula is solved for the unknown factor: $\frac{P_t}{E_t}$

Objective estimates made for the rationally assumed factors may be derived from past trends. In the past nine years the component stocks of the Dow-Jones Industrial Stock Average have disbursed, on average, 64% of stated earnings as dividends and ploughed back 36%. The percent capital-gains tax has remained uniform. Values for (PB), (DDR), and (CGT), while subject to personal future estimate, can be rationally deduced.

The graph, illustrated on Page 59, demonstrates for the period, 1925-1959, after excluding the Depression period of 1930-1938, the net profit rate on book net assets of leading manufacturing corporations persistently exceeded ten percent. This is further supported by the study of Cottle & Whitman appearing in the May-June 1958 issue of the Harvard Business Review. The average net profit rate on book net assets, herein expressed as (RCI), may be objectively estimated for a stock index, such as the Dow-Jones Industrial Stock Average, or by corporate analysis for an individual stock.

A formula approach permits substitution of component estimates in place of composite judgment in estimating a future P_t/E_t. This is not only a superior analytical procedure, but permits intelligent revision of component estimates when and if future events prove the need.

The formula approach, furthermore, remains totally objective regardless of interim market activity. A respected market service has recently concluded from its research that 61% of a major stock price rise may be attributed to market psychology.[1] The need for objective measures, under such circumstances, becomes self-evident.

As an example of formula application to central value, the following computation has been applied to the Dow-Jones Industrial Stock Average. Its level has been assumed at 700, and its current earnings estimated at $35 on a book net asset value of $350, indicating a net after-tax return on capital investment of ten percent. Personal estimates for its future ploughback, dividend disbursement rate, and effective personal capital-gains tax are 40%, 60%, and 20% respectively.

The formula restated in terms of the foregoing assumptions for a period $(t)_5$ becomes:

$$700 + (700)\ (5)\ (0.035) = \frac{P_t}{E_t}\,[((1.0 + (0.40)\ (0.10))^5\,(0.10)\ (350)]$$

minus

$$0.20\left[\left[\frac{P_t}{E_t}((1.0 + (0.40)\ (0.10))^5\,(0.10)\ (350)\right] - 700\right]$$

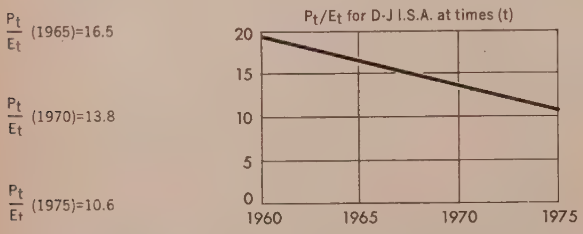
plus

$$\frac{5\ (0.60\ [35 + [((1.0 + (0.40)\ (0.10))^5\ (0.10)\ (350)]}{2}$$

where $P_o = 700$; $t = 5$; $y = 0.035$; $PB = 0.40$; $RCI = 0.10$; $BNA = 350$; $CGT = 0.20$; $DDR = 0.60$; $E_o = 35$.

The $\frac{P_t}{E_t}$ calculation of the above is: 16.5 for $(t)_5$.

Similar calculations for the P_t/E_t for $(t)_{10}$ and $(t)_{15}$, lead to the following:



The portion of the above formula relating to E_t indicates for the Dow-Jones Industrial Stock Average the following estimated earnings: E_t (1965) = $42.60; E_t (1970) = $52.00; E_t (1975) = $63.00. The following table indicates the range of its central value for P-E multipliers from 10 to 25, based upon estimates for 1965.

P_t/E_t	Central Value	P_t/E_t	Central Value	P_t/E_t	Central Value	P_t/E_t	Central Value
10	430	14	590	18	770	22	930
11	470	15	640	19	810	23	980
12	510	16	680	20	850	24	1,020
13	550	17	730	21	890	25	1,060

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1. Arthur Weisenberger & Co., N. Y.

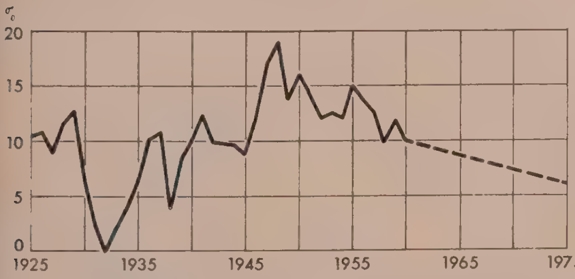
Personal estimates of a proper central value to be assigned the Dow-Jones Industrial Stock Average may be made from the foregoing data and that applicable to 1970 and 1975.

The preceding chart and table indicate the stock market either anticipates a steady deterioration of corporate earning power, a substantial increase in bond yields, or demands a high discount on price simply for extending past experience into the future. Since the market action of the past half-year is not consistent with anticipated deterioration of earning power, nor the yield spread between short- and long-term bonds suggestive of radical change of money rates, the conclusion drawn is that future projections automatically demand a market discount.

In this respect, it is interesting to observe the necessary future relationship of net rate of return on capital investment at $(t)_5$, $(t)_{10}$, and $(t)_{15}$, to current rate in order to maintain the D-J. I.S.A. constant at a 700 level and a P-E multiplier of 20. Under such circumstances, E_t would remain at all times constant at $35. If ploughback, dividend disbursement rate, and capital-gains tax rate are assumed constant at 40%, 60%, and 20% respectively, the computed net rate of return on book net assets (RCI) would be as follows:

$$RCI_{t5} = 8.5\%; \quad RCI_{t10} = 7.4\%; \quad RCI_{t15} = 6.6\%.$$

This is graphically illustrated in the following chart, projecting the data of the First Nat'l City Bank Letter of April 1960, previously referred to, through 1975. The dotted line represents the stock market's future projection of net rate of return on book net assets, and the solid line the past performance.



Net Profit Rate on Book Net Assets of Leading Manufacturing Corporations
(Adapted from The First National City Bank Letter, April 1960)

Percent ploughback may affect central value equally as much as rate of return on book net assets, and since both are generally interrelated, it is better to speak of the capital profitability-ploughback factor. However, based upon the past history of P-E multipliers, it is believed the stock market is not passing judgment on the future net rate of return on book net assets, nor on future percent ploughback, but is simply demanding a substantial discount in price below central value because future projections are involved. This appears to have been the experience of the past fifteen years, and this discount demanded will probably become less and less as it is more generally recognized as an artificiality.

The validity of this surmise and of the formula approach to P-E multipliers may be gained from an examination of the past. Using the indices of Dow-Jones, Standard-Poors, and Moody's for the period, 1949-1959, an increase in earnings of their component stocks approximating 50% is noted. An approximate 40% ploughback of net earnings characterized these stocks during that decade. Using an average 10% net rate of return on net book assets, application of the formula to 1949 data would have forecast the approximate doubling of earning power that occurred during this decade. The formula would have similarly demonstrated the unrealistic level of 1949 P-E multipliers as reflected in the P-E multipliers which would have had to result in 1959 to equate the formula. By implication, then, the formula would have forecast a substantial rise in the multipliers from the 1949 level, and would have established a central value for the D-J I.S.A. in 1949 much higher than its then level.

The formula approach appears particularly useful in estimating future earnings and equating P_t/E_t ratios for growth stocks. Following is an illustration of the application of the formula to a hypothetical stock having a current P-E multiplier of 70.0, a ploughback of 80%, and a 25% net rate of return on net book assets. The P_t/E_t ratios have been computed for five, ten, and fifteen-year future periods. The formula calculation indicates:

$$\frac{P_o}{E_o} = 70.0; \quad \frac{P_t}{E_t}(1965) = 32.8;$$

$$\frac{P_t}{E_t}(1970) = 15.5; \quad \frac{P_t}{E_t}(1975) = 5.9$$

A formula approach rationalizes the selection of a proper P-E multiplier. If recognized as a technique to limit excesses in estimates of proper multipliers, and not as a forecaster of them, it should prove a useful tool. More significantly, the formula approach anchors the analyst to rationally defined estimates and frees him from becoming victimized by market psychology.

As the Weisenberger research implies, when it comes to P-E multipliers we are still navigating by barometer when we could be making some nice "star-sight" positional fixes.

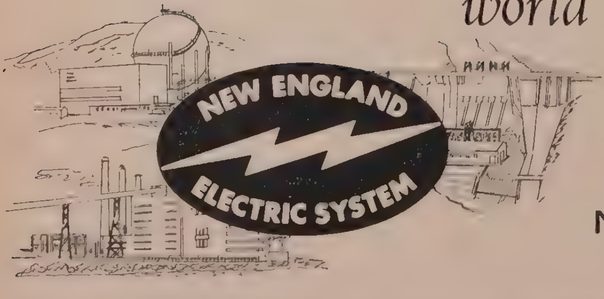
Federation Founded in 1947

The National Federation of Financial Analysts Societies, now The Financial Analysts Federation, was founded June 11, 1947. Representatives from the following four Societies were present: Boston, Chicago, New York and Philadelphia.

The Odd Lotter

How good an investor is the odd-lotter? *The Exchange* Magazine, official publication of the New York Stock Exchange, poses the perennial question in a recent issue, and concludes that odd-lot investors do as well as any other group over the long term and perhaps a little better. Historically, odd-lotters buy more shares than they sell, as a group.

New England's good living attracts good people – able, talented people who make New England one of the prosperous areas of our country – as well as just about the best place in the world to make a home. Come join us in good living!



NEW ENGLAND ELECTRIC

"SERVING TWO AND ONE-HALF MILLION PEOPLE IN A REGION WHERE DIVERSIFIED SKILLS BRING SOLID GROWTH."

INSTITUTIONAL INVESTING

by Richard W. Lambourne

THE MOST significant facts concerning institutional investing are: (1) the continuing large growth of institutional funds and (2) the increasing extent of investment of those funds in equity securities.

PENSION FUNDS

Noninsured corporate pension funds have maintained a growth rate of around 15% in recent years. Since 1950 the assets of the group, which includes deferred profit-sharing plans, have risen from about $6 billion to over $32 billion market value at year-end 1960. In addition, reserves of other private noninsured funds, such as multi-employer and union-administered plans, amount to more than $2 billion.

Pension funds have emerged as the most important class of stock buyers for investment.* The market impact may be measured by the fact that both their gross and net purchases of common stocks have more than doubled in the past five years, as indicated below:

Noninsured Corporate Pension Funds (Million)

	Purchases	Sales	Net Purchases
1956	$1,000	$229	$ 772
1957	1,186	208	978
1958	1,527	335	1,192
1959	2,066	493	1,573
1960	2,289	572	1,717

In 1959 and again in 1960, about 50% of the available cash receipts of the noninsured corporate pension funds went into common stock investments, which now amount to over $14 billion or about 44% of assets. By way of comparison, in 1951 common shares represented only 12% of assets and purchases of equities were only 22% of cash receipts. While the rate of acquisition of common stocks (as a percentage of net cash flow) may have reached a practical maximum, there is little evidence at present of a cut-back in equity investing by the funds.

It is significant that net purchases of stocks by the private noninsured pension funds were equivalent in value to about 52% of net new corporate equities issued in 1960, compared with 38% in 1959 and only 25% five years ago. These figures are based on S.E.C. estimates which include sales of investment company shares in the total of new corporate issues. If, however, investment companies were treated as savings institutions in the compilations (i.e., if their sales of new shares were eliminated) the totals for new capital issues would be materially less and the percentage relationship of pension fund buying much higher in recent years.

It would seem probable that the combined net stock purchases of pension funds and other financial institutions will continue annually for some time to absorb a very large fraction of the amount of new capital stock issues coming on the United States market.

Even if the rate of asset growth in private noninsured pension funds should decline to around 10%, the annual net additions in dollars of new money would still be close to and probably in excess of the current level ($3.5 billion per year). However, present trends in the field do not suggest any such drop in the growth rate over the next several years.

It is estimated that about 22.5 million people are covered by all private pension plans in the United States, of which 17 million are in noninsured plans and 5.5 million in plans insured by life companies. About 8 million more are under public retirement systems exclusive of Social Security and the military. Considering population growth and social trends, a further large expansion in the numbers of people covered by private plans is probable. From the viewpoint of stock investing, efforts by the life insurance industry to enlarge its share of the pension market via variable annuities would represent a substantial new institutional demand for equity securities. Meanwhile it seems unlikely that the noninsured funds will make any sharp alteration in their investment policies with respect to the proportion of new monies going into stocks, at least on the average.

INVESTMENT COMPANIES

Assets in this group now are in excess of $20 billion, by far the largest part of which is represented by the mutual open-end funds. In the aggregate, common stocks account for the bulk of portfolio holdings. The

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*The reference here is to net annual investment in stocks. In 1960 the net purchase of $1.7 billion by the noninsured funds exceeded the total of net purchases of stocks by all other types of investing institutions, according to compilations of the S.E.C.

Reliable statistics are not available on the proportion of total trading of stocks in the listed and unlisted markets represented by institutional investors. Individuals still account for (by far) the largest percentage of turnover. In terms of ownership of shares, figures are also incomplete but estimates have been made that financial institutions own or control as much as one-third of all stocks outstanding. A recent survey indicates that institutional investors own some 17% in value of all shares listed on the N.Y.S.E., a figure which seems on the low side.

Richard W. Lambourne, a vice president of Insurance Securities Incorporated, San Francisco, served as Treasurer of the Ford Foundation in New York from 1956 to 1960 and thereafter—until his move West—was Investment Counsel for the Foundation. Mr. Lambourne is a former faculty member of the Stanford University Graduate School of Business and is well known as a writer and lecturer on investments and financial research. He is also a past president of The Financial Analysts Federation.

rate of asset growth of investment companies has somewhat moderated, but new cash additions are still very substantial at around 6%, or \$1.2 billion per year. Net purchases of stocks by investment companies have amounted to about \$1 billion in each of the last three years, second only to the pension funds in the institutional field.

Emphasis has shifted to the "stock" funds, which in general are showing marked growth in capital additions (as well as in asset value) in contrast to a lesser rate of expansion in the "balanced" fund types. A noteworthy development is the rapid growth of contractual and accumulation plans, many of which feature the stock funds—often tied in with companion life insurance for various purposes. These plans have the effect of creating a growing demand for equities on almost a "dollar-averaging" basis. The increasing acceptance of dividend reinvestment has become an important factor in the asset growth of mutual funds.

A new development has been the creation of sizeable "Centennial-type" mutual funds through which large stock-holdings of individuals are automatically converted into assets of funds under professional management. Transfers of more than \$700 million have been made to date.

LIFE INSURANCE

A fairly recent characteristic in the life insurance industry is the growing amount of funds invested in equity securities. Regulatory limits have been liberalized in the past decade and this process is continuing in a number of states. Corporate stocks held by life insurance companies are estimated at somewhat over \$5 billion, which is of course only a small percentage of total resources of about \$120 billion. However, the rate of annual purchases is now becoming more significant in the securities market, amounting (net) to approximately \$400 million in common and preferred shares in 1960 compared with under \$200 million in 1959 and smaller amounts in previous years. It may be noted that the buying of common shares by life companies is quite persistent by reason of the prevalence of dollar-cost averaging methods used. Since 1955, common stock holdings by life insurance companies have grown from around \$1.9 billion to about \$3.2 billion at this time.

Insured pension plan reserves of life insurance companies (which are almost entirely invested in debt securities) have risen from about \$11 billion in 1955 to around \$19 billion at present, a lower rate of growth than the noninsured pension funds. The insurance companies have been handicapped in developing pension business by various kinds of tax exposure and by limitations on investment in common stocks. By January 1963 the insured pension plans will be fully competitive with the noninsured plans on an income-tax basis, but the latter will continue to have the advantage of more flexible investing.

However, looking further ahead, a most important consideration in the life insurance field is the possibility of eventual approval for widespread sale of variable annuities, which has already started on a very modest basis by three new life companies. While some of the old-line life companies are still professing strong opposition, the evidence seems to be that all but a few of the majors are quietly making their plans for what now seems to be an inevitable development at some point in the future, in spite of the regulatory and other hurdles yet to be crossed. The favorable experience of Teachers Insurance and Annuity Association — College Equity Retirement Fund in offering a package of fixed-dollar annuities and variable (common stock) annuities since 1952 has not gone unnoticed.

Issuance of the variable annuity on a major scale by the life insurance industry would, of course, lead to a much larger demand for common shares from a great institutionalized savings source. Estimates of the potential range from \$1 billion a year for new stock investments to much higher figures. At this point it is not possible to determine either the timing or what the amounts might be, except that they could be substantial. Variable annuities with favorable tax features would be designed to attract individual savings now going into mutual funds and other types of investments. Possibly of even greater importance, the life insurance companies would be enabled to compete much more effectively for large group pension business vis-a-vis the noninsured plans.

In the meantime the mutual fund industry is moving ahead with combination offerings of fund shares and life insurance contracts, as noted earlier. The large funds with their own sales forces and the merchandisers of contractual plans are in the forefront—and a relatively new departure is the ownership or control of captive insurance companies for these purposes. If the variable annuity is approved in the insurance industry-at-large, the battle for the investor's investment dollar will be fully joined. Indeed, one of the large investment company organizations has registration statements pending for sale of fully mutual variable annuities (with no guaranties as to mortality and expense factors) to compete with the "guaranteed" variable annuity plans, such as proposed by Prudential Life Insurance Company of America in its plan now before the S.E.C. for clearance. Others will no doubt follow. It is reasonable to believe that the end result of this competition will eventually be a further channeling of individual savings into institutional investment portfolios which emphasize equity securities.

Other Insurance Companies

Aggregate holdings of common stocks by fire and casualty companies in the United States (including stocks of subsidiaries) are estimated at close to \$9 billion or about 30% of total assets. Net additions to investment assets flattened out at about \$1 billion per year in the period 1954-1958, due to adverse underwriting experience, but are now accruing at an annual rate of over \$1.5 billion. Net purchases of corporate stocks rose to approximately \$300 million in 1959 and in 1960, and are expected to be at or above that level in the next several years.

The movement toward mergers and creation of full multiple-line organizations is continuing, a trend which may gain impetus under the recent court decision in New York authorizing out-of-state life insurance companies doing business in the state to own fire and casualty affiliates. A next step may be the granting of similar authority to life insurance companies domiciled in New York. Since the property-casualty insurance market as a whole is expanding, these and other measures aimed at satisfactory underwriting margins could in time lead to more flexible portfolio policies and a greater use of equity investments.

NONPROFIT FOUNDATIONS

It is estimated that private foundations in the United States have assets of over $12 billion, a large part of which is represented by common stocks. Growth in this area is continuing, with about 1,200 new tax-exempt foundations formed each year compared with some 13,000 now listed by the Foundation Library Center. It is interesting to note that total grants (at a rate recently of around $600 million a year) are not much in excess of annual income. In the aggregate the drain on capital funds has been more than offset by portfolio appreciation over the years.

Figures are not available as to the total annual amount of net stock purchases by foundations. In fact, many of them constitute on balance a net supply of new stock coming into the public market as a result of investment diversification moves out of large concentrated holdings. However, a large proportion of such realized funds is eventually channeled back into other equities. It seems probable that the total amount of diversified investments, including debt securities, under foundation control will continue to expand. As in the case of private pension funds, there is much evidence that the investment policies of many foundations have loosened up in the direction of special placements, less rigid stock selections, etc. There is no doubt that foundations as a group are becoming a much more important force in the institutional securities market than in the past.

Other Nonprofit Institutions

Up-to-date information on university and college endowments is not available. It is likely, however, that total investment assets are now at a figure in excess of $5 billion.

In the academic year 1955-56, of a total of 1,858 colleges and universities in the United States, 1,094 had endowment and 764 had none. Endowment resources then amounted to about $3.7 billion at book value (which was double the 1940 amount). In 1958, a survey was made of 200 selected educational institutions believed to hold about 85% of the total endowment funds. Endowment assets for the 200 institutions was about $3.8 billion, of which close to 50% was invested in common stocks, which have gained much greater acceptance in the past decade in the educational investment area for a variety of reasons.

Educational institutions are turning increasingly to professional management of their endowment funds. In many cases this reflects a build-up of investment assets to a size justifying the expense of a separate staff or outside counsel.

There are various continuing influences which suggest that further important growth of assets lies ahead in this nonprofit field. Educational institutions are a primary recipient of grants from private foundations, a considerable part of which is resolved into endowment money in one form or another, and to some extent this applies to government grants as well. Moreover, the stock market rise of the past two decades has created large new private fortunes which through death or gifts end up in part in university and college endowments. Of course, this same influence is continuing to lead to expansion of the investment assets of foundations and in the amount of private trust funds administered by banks and trust companies.

Statistics are difficult to assemble with respect to various other nonprofit areas. In 1952 the total nonplant assets of private hospitals were estimated at $1.5 billion of which about $1 billion represented endowment funds. Possibly this amount has increased more than 50% in the intervening years. There are some hospital associations with substantial investment portfolios. Further growth of financial resources seems assured in light of large national expenditures on medical research, care of the aged and other social trends.

Religious Organizations

Churches and other religious organizations are known to own or control very large financial resources, much of which is in the form of real estate but also including diversified investment securities. Churches have been a beneficiary of the income tax laws (along with foundations, educational institutions, hospitals, et al) which provide individuals in the higher tax brackets with a strong incentive for annual contributions and in the disposition of personal estates. Although aggregate figures are not available, it seems probable that investment holdings of churches in the United States have grown materially over the past two decades and are now in the multi-billion dollar class (exclusive of assets segregated for the support of church schools and hospitals).

The nonprofit area also includes libraries, museums, welfare societies, research institutions and a variety of others. It is impossible to obtain reliable data on the aggregate amount of investment funds held in this category. A continuous drive for endowment or "more permanent" funds seems to be characteristic—to provide a degree of financial independence.

It is important to note certain potential developments in the nonprofit area which could have a significant market influence. One is a movement to authorize state and municipal retirement systems to invest part of their reserves in common stocks. Bills have been presented to the California legislature proposing a constitutional amendment with respect to the state employees' and public school teachers' funds—among the largest in the country. Similar legislative steps to permit common stock investment are in progress in other states. As is the case with variable annuities, it is impossible to predict when liberalization of the law will occur or the extent. However, the amounts involved could be very large. State and local retirement funds have doubled since 1955 and now aggregate almost $20 billion, invested mainly in fixed-income securities. About $100 million of new stock investments were made by public retirement systems in 1960, presumably concentrated in preferred stocks.

For several years, efforts have been made in Congress without success for amendment of the Internal Revenue Code to allow professional people (such as doctors, lawyers, etc.) and other self-employed individuals to set up their own tax-deferred pension plans, within limits, similar to corporate pension funds and profit-sharing trusts. It seems reasonable to expect that eventually some kind of "Keogh-type" federal legislation will be enacted to alleviate the present tax discrimination against the retirement savings of the self-employed. This would be a significant development since the aggregate sums could be substantial and since most of such funds would probably be channeled for long-term investment into institutional hands—bank trustees, specialized mutual funds for professional groups, variable annuities, etc. Another interesting development is the trend of legislation in various states allowing "Kintner-type" associations of professionals to set up tax-deferred pension plans.

OTHER INSTITUTIONAL INVESTORS

As a group the banks and trust companies of the country control the largest institutional volume of common stock investments, as shown in the following estimates of the American Bankers Association.

Personal Trust Accounts — 1959
(Billion)

Common stocks	$37.2
Participation in common trust funds	2.6
Preferred stocks	1.3
Bonds, mortgages, cash and other investments	16.1
Total Market Value	$57.2

Of this $57.2 billion, the banks and trust companies had sole responsibility for $24.6 billion and shared or had no responsibility for $32.6 billion. The figures include only living and testamentary trusts and guardianships. It is exclusive of estates in probate, personal agencies, custody accounts, pension and profit-sharing trusts, corporate trust accounts, and unfunded insurance trusts. It is also exclusive of investment advisory and management accounts which in the aggregate are very large. Figures are not available on the annual amounts of stocks bought and sold by the banks for personal trusts and other controlled accounts. However, the totals run into the billions, and it is clear that the banks and trust companies represent the largest single class of institutional investment business.

Expansion of personal trust volume has been relatively steady at a moderate rate over the last several years in terms of new accounts. The total amount of investment assets, however, has grown more rapidly in reflection of the rise in market values. The banks have a very strong position in the noninsured corporate pension fund and profit-sharing trust field, where they act in the capacity of trustee or as advisors with either full investment authority or in conjunction with corporate managements. Many of the largest funds are, in effect, under bank trustee control; and it is typical of smaller funds to be set up with the trust departments of banks.

Thus, the banks represent a prime force in the institutional market, directly and indirectly, and there is every prospect that their influence among professional investors will continue to be great.

It is to be noted that the investment counsel business has shown a steady growth, particularly in the past decade. Accurate data is not believed to be available on the amount of assets controlled or supervised by professional investment counsel organizations. However, it is obvious that the aggregate sums are in the billions. While the figures would overlap various types of funds previously referred to — pension and profit-sharing trusts, mutual funds, college endowments, etc. —a substantial proportion is represented by the accounts of individuals. In effect the latter have to be viewed as institutional accounts since the investment decisions affecting them largely originate with the professional advisors. Moreover, there is an increasing trend toward active "investment management" under power-of-attorney arrangements in contrast to the mere rendering of advice. This affords another example of the conversion of individual security holdings into the hands of professional firms, many of which are run along institutional lines with extensive research staffs at exceptional quality.

Foreign Institutions

A relatively new element in the investment market has been the emergence of foreign institutions as important buyers of American securities in recent years. Trends in Western Europe since the war have included substantial growth in the number and size of private investment trusts, liberalization of retirement systems to permit greater investments in common shares, and a large increase in the assets of foreign insurance companies and banks, many of which are sizable investors in United States securities for their own account or for controlled funds. The widening international aspect of the institutional market is seen also in the increasing use of foreign stocks in domestic investment portfolios.

For some years the mutual savings banks have been "small" buyers of corporate stocks, amounting to $100 million a year or less for the country as a whole. The imposing rate of growth in the savings and loan industry is perhaps worthy of a special note — averaging over $6 billion annually since 1955 and now at a rate of over $8 billion. These figures compare with asset growth rates of about $1.8 billion a year for mutual savings banks and $6 billion for the entire life insurance industry. The savings and loan associations do not have a direct effect on the stock market, since they are not

stature... *is attained by measuring up to great challenges. Such challenges have been met and conquered time and again as the natural gas industry has answered the nation's mandate for a better way to fuel America's homes and industries. > Texas Gas has played its part by aggressively supplying energy to meet the expanding demands of mid-America. Companies should examine the growing eight-state region served by Texas Gas for the advantages it offers in transportation, labor, central location and abundant supplies of economical natural gas.*

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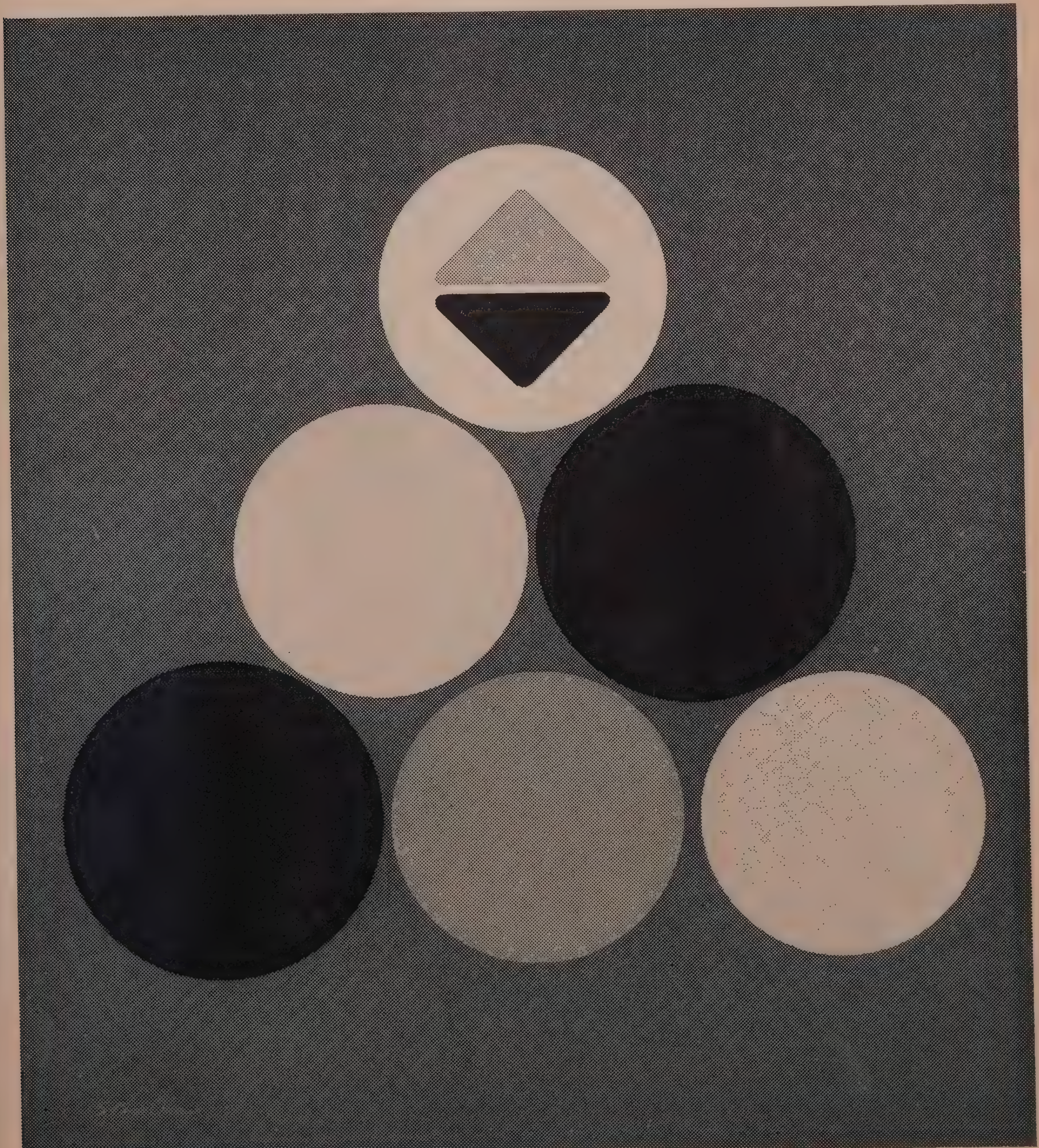

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stock buyers. However, there is probably an indirect influence of some import. With the savings and loan associations absorbing billions of new mortgage loans each year, pressures against other institutions to invest in mortgages are alleviated. This in turn may be a factor in the more flexible investment policies adopted by other institutions in recent years, including greater consideration of common stocks, convertible securities and a wide variety of private placements.

THE NEW LOOK

In addition to the tremendous size and broadening scope of the institutional market, it is important to note some of the qualitative changes that have taken place.

Investment Research

Most investing institutions are now better staffed than in the past. This improvement dates roughly from the end of World War II and it has been coincident with the growth of the Financial Analysts Societies, which are now located in all of the large financial centers of the country. The number of experienced Financial Analysts employed by institutional investors has risen considerably, reflecting both the training process of young people taken on after the war and the recruitment of qualified Financial Analysts from other sources. Salary scales have shown a substantial advance.

The typical Financial Analyst working today with institutional funds is a much better informed investment man than his counterpart of 10-20 years ago. Through the Financial Analysts Societies there is a more timely interchange of information and ideas. Much progress has also been made in methods of analysis and valuation; and the amount of reliable corporate information is increasing. The amounts spent on travel and field research run into considerable sums, whereas years ago such expenditures were not only small in the aggregate but considered quite unnecessary by many investing institutions.

These trends apply in particular to the large pension funds, banks and investment companies. In the life insurance industry the large companies have been aggressive in establishing more specialized investment divisions to cope with the increasing attention being given to common stocks and direct placements. Similar steps have been taken in the large foundations and universities in line with expansion in the size of their diversified investment portfolios.

It is quite true, of course, that there are numerous small institutions which operate with little or no investment staff. Many of these are in the nonprofit area. Investment responsibilities in these cases are usually lodged with trustees or finance committees, which in turn lean heavily on advice from banks and trust companies. In many instances, investment counsel firms are employed.

Meanwhile a similar up-grading of analyst quality has occurred in the securities business itself. The number of investment firms releasing first-class research material designed for institutional customers has probably more than doubled in the past decade. In general there is a much higher degree of reliability in such material than existed before the war. The maintenance of close research connections with corporate managements is essential today; in earlier periods they were the exception rather than the rule. Moreover, there is keen awareness that institutional portfolio managers require research in depth and the kind of analysis on which longer range investment decisions can be based—a far cry from the sketchy recommendations of investment houses so prevalent in the "old days."

Thus, throughout the spectrum of investing institutions, of varying sizes and types, we see the development of larger and more competent investment staffs dealing with more comprehensive and reliable research materials provided by their own staffs or furnished to them by investment firms, specialized service organizations and others.

Investment Policies

The investing practices of financial institutions have changed in the past few years in certain important respects. For example, stock investments by noninsured corporate pension funds in the early postwar period were characterized by emphasis on current yields which in general were above the going rates on high-grade bonds. With the advent of higher interest rates after 1955-56, it was thought by some students of the institutional market that the extent of stock investing would be reduced. This has not been the case, since even in the high money markets of 1959-60 the relative amount of investment going into equities has continued to grow. Emphasis in many pension funds has shifted instead to earnings growth or "future income" as a stock investment criterion. The rate of return on market value of assets of corporate pension funds increased from 3.39% in 1956 to 3.64% in 1960 despite the substantial increase in common stock prices. Moreover, with a higher level of interest rates it has been found that a substantial part of actuarial income requirements can be covered by holdings of debt securities, thus making current dividend yield a less important factor in the common stock portfolio.

In 1960 some of the life insurance companies sold common shares on balance, reinvesting in higher-yielding bonds, and this occurred also to a degree in the property-casualty insurance field. However, the motivation in many cases was not the attraction of high returns on fixed-income securities but rather a desire to take portfolio profits in what was viewed as a vulnerable stock market—and in the process making permanent additions to book surplus. It may be noted that even so, the net amount of stock investment by all of the life companies was larger in 1960 than in 1959.

The general policy of the Fifties in most pension funds was to limit common stocks selections to blue-chip issues representing large, financially-strong companies believed to have favorable long term growth prospects or, in any event, a well-sustained earnings and dividend-paying capacity. Similar investment policies were prevalent in most institutions — insurance companies, banks, mutual funds, etc. Combined with other factors, such as dollar-averaging procedures and the increasing amount of new funds available for equity investment, the cumulative effect was a pronounced rise in price-earnings ratios throughout the blue-chip list. This situation has persisted in the market, especially in the utilities, foods and other noncyclical groups. In view of the institutional forces at work, it seems likely that quality "growth" stocks will continue to receive strong support under almost any market conditions. This is not to deny that periods of over-pricing and wide swings will take place in these stocks from time to time as they have in the past. Moreover, it is obvious that blue-chip issues selling at very high price-earnings ratios are vulnerable to any developments causing a material lessening in their expected rates of earnings growth. Indeed the blue-chip list is well-studded with recent examples of this in the chemical, electrical equipment, oil, aluminum, electronics, and other groups.

Seeking Future 'Blue Chips'

While delving for "special situations" has been going on for a long time in a modest way among various types of institutional investors, it was not until 1958-1959 that a veering away from the standard precepts of blue-chip investing was begun on a significant scale among the large investment institutions. This trend was accelerated in 1960. An unusual amount of institutional research energy has been devoted to seeking out small companies with superior growth potentials, "blue chips of the future" as it were. Major institutional commitments have been made in issues of this type, often on a lock-up basis. Some funds have also reduced purchases of, or even eliminated, those "tired old blue-chips" whose earnings have either flattened out or declined.

The search for new "growth" stocks has been logically centered, in general with considerable success, in (1) fields where new technologies and scientific developments are on the rise, such as data processing and electronics, and (2) companies geared closely with consumer income, such as services, utilities, publishing, new methods of retail distribution, foods and other consumer products, and (3) financial companies with real growth attributes, as found in life insurance, banking, consumer credit and savings and loan. At times, as in mid-1960, the whole business has been much overdone, thus leading to substantial market price corrections. It may be observed, however, that these adjustments have turned out to be excellent buying opportunities in the case of stocks showing persistent earnings growth.

The so-called "cyclical" stocks have lost much of their institutional caste, exceptions being those with a good underlying growth trend. Before the war, many portfolio managers operated on the basis of shifting major amounts of funds between equities and bonds in line with their forecasts of the business or stock market outlook. Cyclical stocks such as steels, rails, papers, etc., were often used in such moves. This did not turn out to be a practical approach in the postwar years and it is not prevalent today. Alternative methods such as "formula timing" plans, designed to eliminate forecasting, were tried and found wanting. The dollar-cost-averaging or "constant-purchasing" systems have proven to be a more realistic investing approach for many financial institutions because of their relatively steady net inflow of cash funds for long-term stock investment.

More recently some of the heretofore devotees of strict dollar-averaging have introduced elements of flexibility in their methods. Instead of rigid buying schedules regardless of the market level, some managers will increase the dollar amount of stock purchases in declining market, and reduce them after a substantial rise, but never completely abandoning the averaging policy.

Another change is seen in modifications of former "industry diversification" patterns. Most institutional managers were accustomed to having equity investment portfolios diversified on the basis of pre-set percentage allocations with few deviations permitted. The more modern approach is to invest in the shares of attractive companies within broad groupings and to avoid "diversification just for diversification's sake." Even the traditional policy of "geographic spread" of holdings in such industries as utilities, oils and banks is being modified in favor of concentrating in areas of particular growth.

Thus it is characteristic of the times to break away from earlier investment rigidities in the management of institutional accounts. This is leading to much greater use of over-the-counter stocks instead of insistence on NYSE listing; use of foreign issues of sound quality which many institutions formerly excluded from portfolios on "policy" grounds; and a willingness to buy and hold large blocks of stocks with limited markets. There is much less emphasis on "liquidity" as a basic requirement in institutional portfolios, particularly when their asset size makes it impractical to obtain immediate marketability in securities holdings or when it is unnecessary because of dependable large cash inflows pressing for investment.

Flexible Portfolio Management

In the pension funds and other institutions with little or no tax exposure, the loosening-up of investment policies is also reflected in greater willingness to sell specific holdings if considered unattractive and to reinvest in other stocks. This is now often done within the framework of a dollar-averaging system. Such institutions do not have to pay capital gains taxes, a considerable advantage over taxable investors in terms of ability to shift portfolio holdings without a tax penalty.

It is not feasible in this review to cover all of the many facets of institutional investment policy—the differences in investment objectives among mutual funds, the variations of practices found in the banks and trust companies of large financial centers in comparison with those operating in small communities, etc. The institutional market is made up of many parts, each of which has its own peculiarities. In all these segments, however, there is much evidence of more alert portfolio management and a greater disposition towards taking investment actions which represent a break from old standards, if they can be intelligently supported.

Standard Oil Company ⟨Indiana⟩: a six months' progress report

Crude production, product sales rise; earnings up 14%; American Oil effects smooth changeover to national marketer

What has happened to Standard Oil Company (Indiana) and a major subsidiary, American Oil Company, since their reorganization at the end of last year? President John E. Swearingen provided the answers in a recent report to shareholders and in the summer issue of SPAN, a quarterly magazine for share owners of Standard of Indiana and employees of its group of companies.

Marketing subsidiary in smooth changeover: Mr. Swearingen enumerated first-half accomplishments of the Company's subsidiary, American Oil Company, after it became a national marketer. New Torch and Oval identification signs were installed at service stations throughout the East, South and Far West. All stations now display a uniform red, white and blue color scheme. The Company's more than 29,000 outlets now feature the popular Atlas® brand of tires, batteries and accessories that were formerly offered only at Midwestern and Far Western stations. Local and national advertising, the greatest campaign in the Company's history, has provided quick consumer recognition of the strides taken by American Oil Company.

In another major move by this subsidiary, the famous "As You Travel—Ask Us" service, which has continued to be an effective sales generator, was extended to outlets in all areas of operations. In the East and South, American's unique unleaded premium gasoline, Amoco®, was significantly improved in octane rating. An office was opened in Los Angeles to undertake development of markets in the Southwestern and Pacific Coast states where the Company has had limited distribution.

The amazing growth of the credit card, and its importance in American Oil Company operations, was emphasized in the summer issue of SPAN. In the Midwest alone, between 1950 and 1960, the number of credit card customers of Standard Oil Company (Indiana) grew from 250,000 to 1.5 million. Since January 1 of this year, the addition of accounts from the East, South and West has swelled this total to 2.5 million. Dollar volume through the newly centralized credit card operation in Chicago often approaches $2 million daily.

Earnings position improved: Mr. Swearingen told shareholders that consolidated net earnings for second quarter 1961 were $30,357,000, or 84 cents a share. This compares with $33,198,000, or 92 cents a share in the same period of 1960. However, Mr. Swearingen reported a 14% improvement in first-half earnings ($74,177,000, as compared with $64,887,000 in first half 1960), and forecast earnings for 1961 as a whole will show an improvement over 1960.

Crude oil production and product sales increased in the second quarter as compared with 1960, but operating expenses, partly due to higher wage costs, also increased. Severe gasoline price cutting over wide areas during April, May and June had adverse effects on profits.

Primarily responsible for the first-half earnings improvement were better prices for refined products early in the year, increases in net production of crude oil and natural gas liquids and in volume of product sales, and the Company's continuing emphasis on cost reductions.

Crude production, product sales up: Net production of crude oil and natural gas liquids in the first six months averaged 350,000 barrels a day, up 11% over the 1960 period. The increase was achieved primarily in Argentina (where production averaged 36,000 barrels a day) and Canada (17,000 barrels a day). In addition, the Lake Maracaibo block in Venezuela became productive in May. The Company's part interest in this block is averaging around 3,000 barrels a day.

Refinery runs during the first half averaged 650,000 barrels a day, up 4% over a year ago when refinery strikes affected operations. Runs were reduced substantially in the second quarter of 1961 in line with market needs. Sales of refined products averaged 684,000 barrels a day for the six-month period, 1.5% increase over a year ago.

International developments: A further step in the Company's petrochemical expansion was taken with the acquisition of a 35% interest in Furukawa Chemical Company, Tokyo. Furukawa manufactures polyethylene and copolymers under license from Standard Oil Company (Indiana). Furukawa produces 20 million pounds of these versatile plastics annually.

The Company also reached an agreement with Algemene Kunstzijde Unie N. V. (AKU) for the joint manufacture of dimethyl terephthalate (DMT) in the Netherlands. Work will start soon by a jointly owned subsidiary on a DMT plant that will use our unique oxidation process. DMT is the chemical raw material from which polyester fibers and yarns are made.

U. S. expansion briefs: In August, another Standard Oil Company (Indiana) subsidiary, Tuloma Gas Products Company, acquired an interest in General Gas Corporation of Baton Rouge, La. Tuloma is one of the nation's leading marketers in the rapidly growing LP-gas field. General Gas's sales approximate 130 million gallons a year.

Work is progressing on the oxo-alcohol plant that the Company is constructing near Haverhill, Ohio, in joint ownership with Pittsburgh Coke & Chemical Company.

Quarterly dividend: Directors of Standard Oil Company (Indiana) declared a regular quarterly cash dividend of 35 cents a share payable September 14, 1961, to the Company's nearly 157,000 shareholders of record as of the close of business on August 25, 1961. It is the Company's 262nd dividend.

The Company also announced plans to pay its dividend for the fourth quarter of 1961 on December 27 instead of December 30. The change from the previous schedule would permit receipt of any such dividend by shareholders before the close of the calendar year.

Directory of Standard Oil Company ⟨Indiana⟩ Major Subsidiaries

AMERICAN OIL COMPANY, headquartered in Chicago, manufactures, transports and sells petroleum products in the United States. It markets through its Standard Oil division in 15 Midwest states.

AMOCO CHEMICALS CORPORATION, Chicago, manufactures and markets chemicals from petroleum here and abroad.

AMOCO TRADING CORPORATION, New York City, buys, sells, and trades crude oil and products abroad.

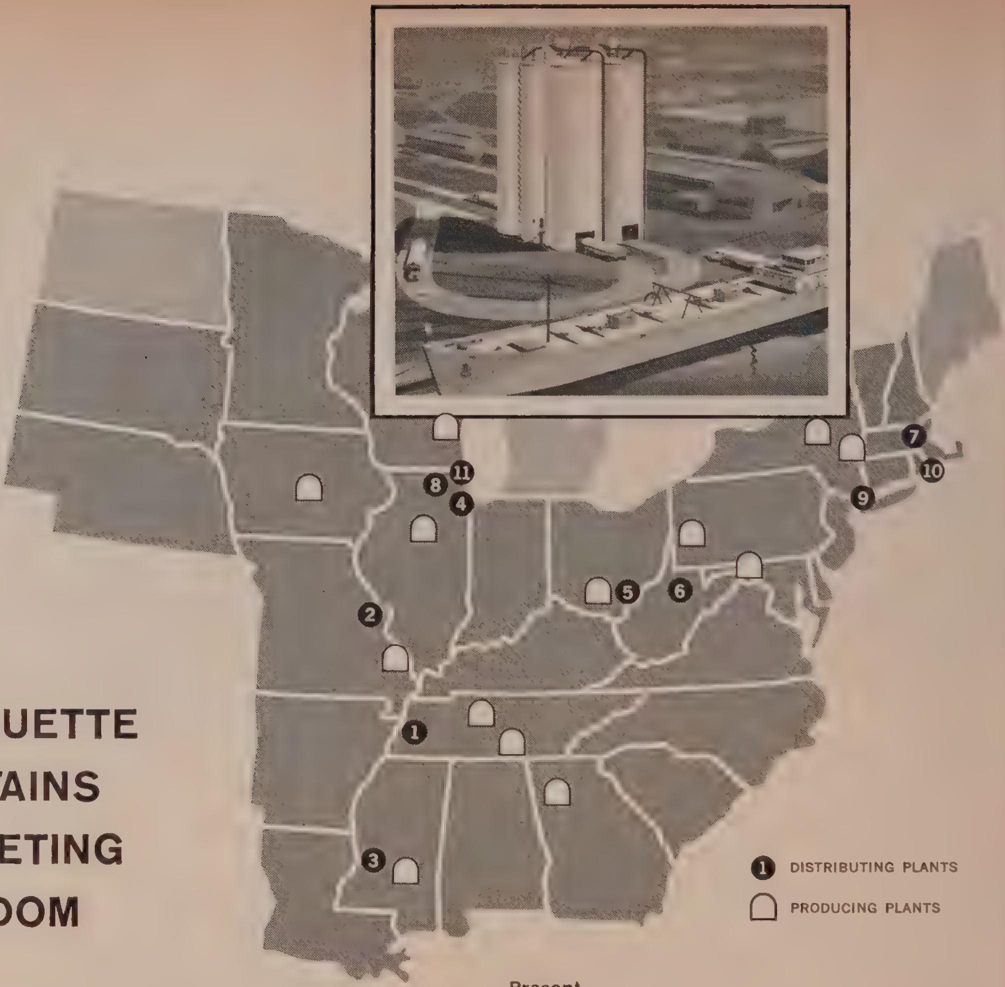
INDIANA OIL PURCHASING COMPANY, Tulsa, buys, sells, and trades crude oil and natural gas liquids in the United States.

PAN AMERICAN PETROLEUM CORPORATION, Tulsa, finds and produces crude oil and natural gas in the United States and Canada. Its subsidiary, Pan American International Oil Corporation, New York City, engages in oil exploration and development outside of North America.

SERVICE PIPE LINE COMPANY, Tulsa, transports crude oil for our refineries and for others.

TULOMA GAS PRODUCTS COMPANY, Tulsa, markets liquefied petroleum gas, natural gasoline, and related products.

STANDARD OIL COMPANY ⟨INDIANA⟩, 910 S. MICHIGAN, CHICAGO 80, ILLINOIS



HOW MARQUETTE MAINTAINS MARKETING FREEDOM

Careful placement of our eleven distributing plants (five of them new this year) enables us to offset competitive delivery advantages, accelerate cement-flow to points of use in our 29-state market, and meet even the heaviest demands of peak-period usage.

Each site has ultra-modern facilities for loading cement onto fast-moving trucks. All but two sites can be supplied by self-unloading barge or ship. (Few can match Marquette's know-how in water transportation.)

Even *more* distributing plants are contemplated as marketing requirements and competitive activity demonstrate need for them.

Present Distributing Plants

1. Memphis, Tennessee
2. St. Louis, Missouri
3. Vicksburg, Mississippi
4. Chicago, Illinois*
5. Marietta, Ohio
6. Fairmont, West Virginia
7. Framingham, Massachusetts
8. Des Plaines, Illinois*
9. College Point, New York*
10. Providence, Rhode Island*
11. Waukegan, Illinois*

**New in 1961*

To Be Built

Boston, Massachusetts
New Haven or Bridgeport, Connecticut
Charleston, West Virginia
Cincinnati, Ohio
Paducah, Kentucky
Atlanta, Georgia

Marquette Cement
MANUFACTURING COMPANY

Executive Offices: 20 North Wacker Drive, Chicago 6, Illinois

One of America's Major Cement Producers

The General Characteristics of Inflation

by A. Hamilton Bolton

(Editor's note: Following is the first chapter of a 1962 book on money and credit, by A. Hamilton Bolton, partner in the Montreal investment firm of Bolton, Tremblay & Company. A second chapter will be published in the Financial Analysts Journal in our January-February issue).

INTRODUCTION

A careful study of inflation leads to the following conclusions:

(1) There is a very general relation between the course of monetary inflation over a period of years and the course of common stock prices. This relationship may be rationalized on the premise that sooner or later earnings and asset values will reflect any large changes in the value of money.

(2) The public has a tendency to confuse price inflation with monetary inflation.

(3) In any short-run period, there can be and have been many cases where common stock prices fail to reflect inflation. This is because inflation, which comes in short sharp doses usually as a result of major wars, creates serious dislocations in earning power, and in doing so also seriously affects established relationship of stock prices to earning power: the rate at which the public is at any time prepared to capitalize earning power.

(4) In any 5-year period these changes in the evaluation of corporate earning power are apt to be far more important than the actual state of inflation.

(5) In any period of inflation, there is built in as time goes on certain credit tendencies which make short-run deflation more and more possible and likely.

The investor should reflect upon the cliches so prevalent concerning the inevitability of inflation translating itself into rising common stock prices. While inflation is a long-term factor of great importance to stock prices, it is not necessarily a gradual process nor inexorable; rather it often happens in short spurts followed by perhaps several years of relative tranquillity. It calls for a considerable degree of skill on the part of the investor before he can translate the actuality of inflation into successful investment policies.

It is our opinion that a knowledge of the facts of inflation is a must to any intelligent and sophisticated investor. This is an attempt to strip away some of the cobwebs which obscure today's loose thinking on the subject.

CHAPTER I

Maintaining Purchasing Power —An Investment Concept

It is understandable that, in the present economic environment, those who have the responsibility for looking after either their own investment funds or those of others should be worried about inflation. A rise in the cost of living put in another way means a decline in the purchasing power of one's investment dollars. Consequently the objective of counterbalancing the decline in the value of money by investment action is always an important part of any investment program.

One of the best means of accomplishing this objective is, undoubtedly, a program of investing one's funds in common stocks. The theory is simple: in a period of rising prices, common stocks are pretty well bound to rise too. The practice however is far from simple.

Since World War II, a large number of countries of the world have witnessed a serious price inflation and accompanying this has been a phenomenal rise in common stock prices. It is not surprising therefore that we find an interest in and a fear of inflation, as well as an interest in common stocks as a means of offsetting the depreciation in the value of money caused by rising prices.

Price Inflation vs. Monetary Inflation

It is easy for those who are not versed in economics to mix "price inflation" and "monetary inflation." Generally speaking people consider that we are undergoing "inflation" when there is a real or anticipated rise in prices of sufficiently long duration and size to be noticeable and therefore seemingly important. Price inflation is this sort of thing applied to prices of commodities and in particular to the cost of living; wage inflation is this sort of thing applied to wages. Monetary inflation however is quite another thing; it is an important increase in the volume of money.

Formerly, monetary inflation consisted simply in the increase in the amount of money outstanding, usually by royal or governmental edict, by means either of reducing the metal content of coins (in days before the introduction of paper money), or by simply printing more paper currency. Today, monetary inflation can be achieved by much more subtle means, as we shall see later, due to the complicated mechanism of highly developed central banking systems in all the advanced

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industrial and commercial countries of the world. But the result is the same: a sharp increase in the volume of money whether that money be bank notes or currency in circulation, or more likely demand deposits in banks available for the issuance of checks, which serve more and more as means of payment.

How "Monetary Inflation" Comes About

Nowadays, the volume of money really consists of two items. First the amount of currency outstanding; secondly, the amount of bank deposits. We need not go here into the differences between different kinds of bank deposits except to say that generally speaking while all bank deposits can be turned into cash fairly quickly we ordinarily consider only those deposits which are known as demand deposits as being part of the immediate volume of money, at least when we are thinking of money as the source from which check payments may be made.

The most important single factor in understanding money and credit is the fact that the *banking system and/or the government through the treasury actually create money and destroy money* by certain banking and treasury actions. Unless this is clear in one's mind, the whole subject of money and credit becomes a vast mystery.

Let us see how this is done from the point of view of the banking system. Suppose that a bank has just been started and John Jones comes in and makes a deposit of $100,000, as a time deposit. For simplicity, let us forget about where this money came from; or let us more realistically suppose it came from outside the country. At this point, a deposit credit is opened for John Jones and the bank has a check for $100,000 which John Jones gave it and which is now deposited in the central bank by the bank as a reserve against liabilities. With these reserves which are at this moment 100% of deposits, this banker can now go out and either lend money or invest in bonds. *Either of these activities creates new money in the form of deposits.*

If the bank lends to Bill Smith $100,000 then Bill Smith has a deposit created for him which gives him that much extra purchasing power. (Keep in mind that John Jones' deposit still exists; he has been deprived of nothing.) The counter-item in the bank's books is their asset: loans outstanding.

If the bank buys $100,000 of bonds from non-banking sources, this also gives the seller a credit in the form of a check for $100,000 which he will deposit in his bank, and an extra $100,000 of purchasing power now exists that did not exist before. This is essentially how money is created, and how monetary inflation comes about.

But there are obvious limits beyond which the creation of new purchasing power cannot go. By tradition and in some cases by law, there are definite reserves which have to be maintained against deposits. As a good round figure, 10% may be taken as typical. Experience over centuries has shown that if the banker maintains solid cash reserves of 10% against all the deposits he receives or creates, there will rarely be a time when he cannot meet the demands for withdrawal on the part of his depositors. Some countries go even lower than this. Thus Canada and England have a minimum cash reserve requirement of 8% against deposits to be held either in banks' vaults or as deposits with the central bank. Needless to say however the banker requires to be especially prudent in the choice of his loan risks, since his bank could fail if his loans were not paid off, or if some of his investments turned out poorly. The lower required reserves, the more important it will be to see that the banks' risk assets (loans and investments) have been well selected.

Creating and Extinguishing Bank Reserves

Nowadays, however, the mechanism of Central Banking has become much more complicated. The central banks have found that they have it in their power to create or extinguish reserves of the banking system, thus allowing the banks to extend more credit or forcing the banks to restrict credit. They use similar techniques to those which the banks use, but they do so much more consciously. For instance they can buy and sell government bonds from or to non-bank sources and "create" and "extinguish" bank reserves and deposits.

Their control of reserves in this manner is the most important control they have. Because of the leverage involved, theoretically a sale of say $1 billion of bonds to non-bank sources could force liquidation of between $5 and $10 billion of demand deposits. Similarly, a purchase of this amount could theoretically create 5 to 10 times that amount in new demand deposits which would become just that much additional purchasing power.

To summarize: Monetary Inflation is the increase in means of payment (supply of money), which for purposes of our analysis consist essentially of demand deposits and currency outstanding, with emphasis on the former. Increases in these amounts increase the *purchasing reservoir* of the community at large. (Whether they will actually increase the *purchasing* of the community is another matter which we will discuss later. And whether it will do so without increasing prices, which would decrease purchasing power, is also a factor for detailed study). From the banker's point of view, the counterpart of these increases in deposits (and currency outstanding) is the increase not only in loans made, but also in other banking assets such as increased holdings of government and other investments.

Both loans and investments form a total amount which is called "bank credit." Total bank credit at any time is the total of all loans and investments made by the bank(s). And it is simply the increase in the amount of bank credit extended (whether it be loan credit or investment credit) which increases the means of payments (deposits and currency which form the money supply) and naturally the purchasing power of the community.

But—

Monetary inflation does not necessarily cause price *inflation;* a number of elements have to jell before this happens.

Price Inflation

There are two principal factors to consider about price inflation:

1. The Productive *Capacity* of the nation, and Increasing *Productivity*.

2. The *volume* of money, and the *speed* with which money turns over (How fast money is spent.)

In a dynamic economy, the natural tendency is for prices to drop, as productive capacity and productivity increase. This is the principle of mass production; the more production one can get and sell, the lower the unit costs and the lower can be the price, which decline in price tends to increase the market, which enables more production and lower prices again (in theory at least and to an important extent in practice). This of course is an over-simplification. It overlooks relative elasticities of demand and supply, as well as the law of diminishing return.

Productivity

Productivity is usually thought of in terms of labor costs. How can we get more work done at a lower unit cost, even in face of rising hourly wages? The answer is usually in a combination of capital and labor such that the net result is obtained, i.e. productivity increases.

Naturally both increases in productive capacity and in productivity are factors of long-term significance; they take a long time to develop in such a manner as to affect the general price level.

Some economists claim that the normal slow price decline from productivity should be offset by monetary inflation to keep prices up. Since however lower prices tend to increase the market, we find little reason to endorse such a theory. One of the most dynamic periods of expansion in the U. S. was the 30 years following the Civil War, during which time there was a slow decline in prices. We see no great reason why declining prices should necessarily stunt real growth. On the contrary, provided the gyrations in price are minor, there is a great deal to be said for a slowly declining price level and cost of living. What needs to be avoided however is violent price change.

Money Volume

A principal factor in the rise in prices is a substantial increase in the volume of money outstanding (monetary inflation as discussed above). We say "substantial" because it is difficult to arrive at a quantitative measure. For instance if the productive capacity of the nation far exceeds its actual production, then it will probably take a very sharp increase in the volume of money to effect a price rise, and even here the chances are the rise will be very small until productive capacity in that line is fully employed.

On the other hand, an increase in the volume of money at a time when industry is operating at or close to full capacity may cause an immediate rise in prices, the reason being that the supply factor of production remains constant while the demand factor increases rapidly.

Velocity

In addition to the volume of money, we must also consider how fast it is being used (or its velocity). In effect, the amount of money at any time is simply a reservoir like a battery in an automobile, or a water reservoir in a large city. It does not mean necessarily that we are going to have a constant strain on that reservoir. The car for instance may stand idle for days or it may be used intensively every day. Sometimes we use available money faster than other times. If we have no immediate use for money, we may well leave it idle. We may have several choices however depending on how our attitude conflicts or agrees with the attitude of everyone else. If we do not have any use, but everyone else has we may compare the various rates of return possible for instance from bonds or from interest on a savings deposit. If the amount is small the nuisance factor may decide us to leave the money in the bank rather than buy a bond. If we are patriotic maybe we will prefer our government savings bonds. But in any event *no matter what we do with our money, it will come back into the banking stream in some form or other and will be available as potential source of purchasing power.*

The velocity of money—how fast it is spent or passed around—shows some unusual characteristics which are perhaps not too well understood.

A special rule of Money may perhaps be stated as follows:

> "The greater the amount of borrowed money in relation to money supply, the faster will it be turned over or passed about."

The higher the percentage of money supply which is in the form of bank loans to individuals and corporations—the private sector of the economy—the faster will money circulate. (A traditional measure of the circulation of money is the number of times a year that bank deposits turn over). A correlation in graph form is shown in Chart I. This shows that the number of times that deposits are turned over go up and down with the relationship of bank loans to deposits. The higher loans are to deposits, the faster the rate of turnover of deposits is and, incidentally, the higher interest rates tend to be. An extended discussion of this phenomenon was published several years ago in the Analysts Journal.[1]

Quantity: The Long Term Dominant Influence

Without minimizing the importance of velocity of money in any discussion of inflation, it is true nevertheless that in the long run the important factor in monetary inflation in its effect on the price level is the volume of money. On the other hand, it is quite clear from a

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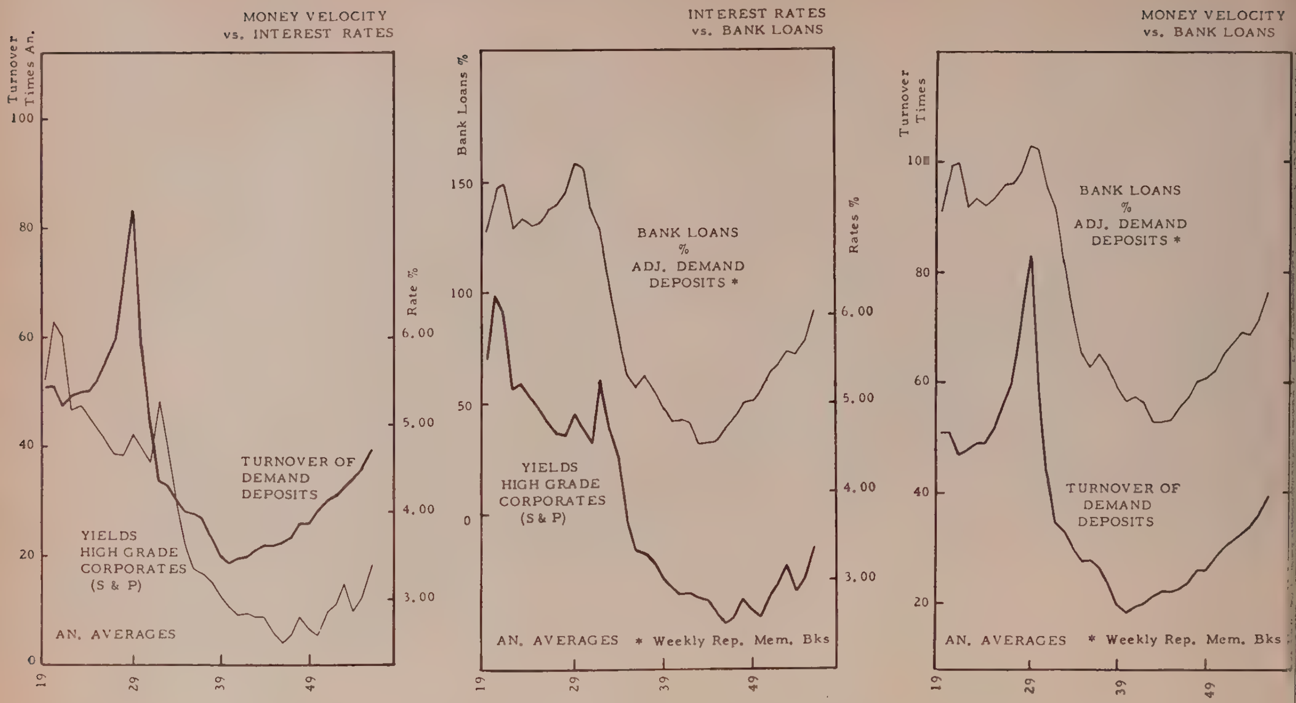
[1] A. Hamilton Bolton: The Money Equation and Common Stock Investments, Analysts Journal of August 1957.

Chart I

Deposit Turnover, Bank Loans and Interest Rates



study of history that increases in the volume of money do not of themselves necessarily cause an *automatic* increase in prices. The offsetting factor which tends to keep prices down is that increases in prices tend to germinate increases in productive capacity because it seems to "entrepreneurs" to be profitable to produce and sell more goods as prices rise. As capacity is increased, competition becomes keener and prices are again pushed down.

In this connection, Chart II is presented. It shows three curves: First the U. S. Bureau of Labor Statistics Index of Wholesale Prices from 1800 to 1960. Secondly we have superimposed our own index of United States money supply per capita, and thirdly we have superimposed a long-term index of stock prices from 1831 to date. It is apparent that in the very long run monetary inflation rather than price inflation has set the trend of stock prices.

It should be further noted that when we talk of "inflation" we have in mind the moderate type of inflation which has been the history in the United States for 100 years or more. In other words we are not here discussing what has been termed "galloping inflation." Unless we have another world war, or a major depression of the magnitude of 1929-33, it is quite unlikely that we will see "galloping" inflation in North America. It need therefore not concern us at the present time.

Price and Monetary Inflations Are Irregular

It is fashionable these days to think of inflation as something which is more or less continuous: a condition by which a country more or less slowly and surely depreciates the value of its money. This conception of inflation is even as we mentioned above the basis of some of our modern economic theories which go something like this:

(1) Since a decline in prices is likely to have a depressing effect on the economy and since increasing capacity and productivity cause a decline in prices, governments must counterbalance this influence by inflating the purchasing power of the community, i.e., its money supply.

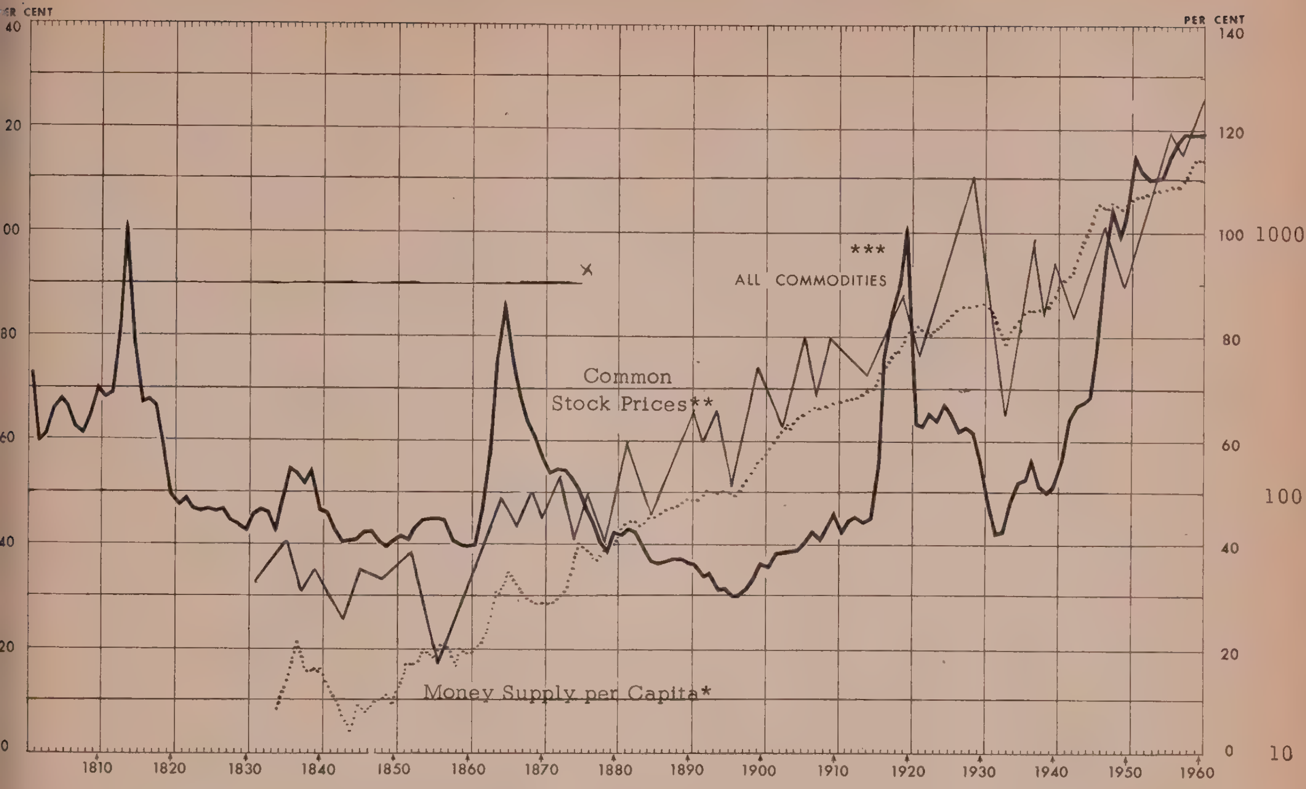
(2) In addition, a growing economy needs more money to assure an adequate demand to take care of the increasing production or supply of goods and services.

If we look at the past it is true that on average over a period of centuries perhaps, prices have had a tendency to rise along with increases in the means of payment, but the facts are that increases in the means of payment in the United States and Canada have neither been steady nor have they been necessarily gradual. Further, money and credit do not necessarily increase by themselves even when monetary and governmental authorities want them to expand.

In the past also important increases in money supply have *not* been made gradually, but have been in relative short spurts, at the initiative of government and for specific purposes, the most important of which has been

Chart II

Money Supply, Wholesale Prices and Common Stocks



BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

* Bolton-Tremblay Index, plotted on a logarithmic chart scale.

** Cleveland Trust Index 1831-57, Axe-Houghton Index 1857-96, Dow Jones Industrials 1896 to date, linked and plotted.

*** Bureau of Labor Statistics, 1947-49 = 100.

the conducting of a major war. These "short spurts" however (in terms of economic history) have been sufficiently long to create an impression of permanence, but we must always view them in their proper perspective. They certainly have not in the past been always ever-upward; and it is our opinion that, barring the calamities of major war or depression, they are unlikely to be in the future.

Wars Create Monetary Inflation Followed by Price Inflation

As noted above the principal periods of monetary inflation have been during wars, when governments, having no other means of financing the extraordinary expenditures required, have resorted to drastic inflationary methods by selling their bonds to the banking system, thus creating a large money supply with which to carry on the war.

Under such circumstances, the central bank becomes the direct tool of government with no alternative but to allow the expansion of credit to continue. (Between 1939 and 1961, the money supply of the United States increased almost 4 times but 75% of the increase occurred from 1939 to 1945.)

What happens in war time is as follows. Credit expansion places money in the hands of the government. This money is spent and in the process is passed from hand to hand. It becomes permanent purchasing power in the hands of the public. But at the same time that this is going on, the productive capacity usable to supply the internal market (i.e. non-war markets) is cut down, as more and more expendable war supplies and equipment are made. This of course creates a tremendous pressure upward on prices, (increasing demand pushing against a declining supply) and it becomes necessary to institute rigid price control systems, the effectiveness of which depends mostly on the seriousness (patriotic feeling) with which the public views the emergency.

When controls are lifted after a war, prices generally tend to move up until supply and demand factors balance. The pent-up demands create need for new capacity, and in turn these new demands themselves put pressure on the price level. However it is significant that eventually as the rising business and price level give

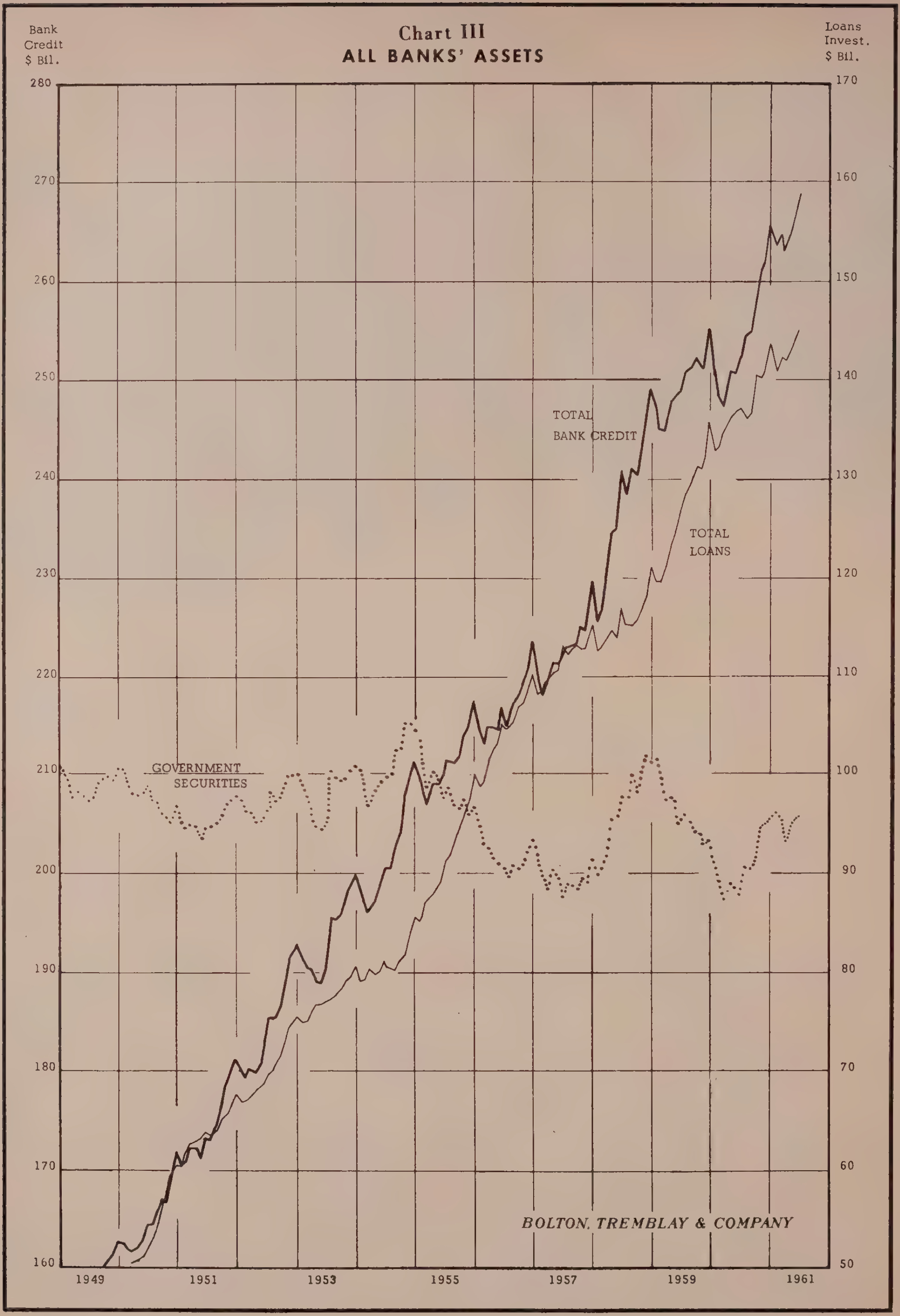


Chart III
ALL BANKS' ASSETS

an air of confidence in the future, business and industry over-extend themselves by assuming (a) that the new demand is permanent, and (b) that whereas a few years before one could only look 6 months or so in advance, now one can look even 25 years in advance with equanimity.

The Role of the Banking System

The role that the banks play in all this period is also interesting. At the end of hostilities one finds a position where the country has an inflated money supply, but the counter items to that money supply are bank assets consisting of loans and investments where there is a predominance of investments rather than loans. In the post World War II experience in the United States and Canada, what happened was as follows.

The postwar boom brought increasing demands for loan credit on the part of the public. The banks had two major means of filling this demand. First, to the extent that they had the reserves, the banks were able to increase loans over and above the amount of bank credit then in existence. This of course created additional purchasing power. Secondly, however, the banks could create new reserves upon which they could increase loan credit by selling more and more of their government securities to non-banking sources; and then they were in a position to increase their loans without however increasing the money supply. (Each sale of government bonds to non-banking sources decreases money supply, and each new loan then increases it again).

Postwar Increase in Velocity Important

But while the process above mentioned in the second case would not increase money supply, it would increase the rate of activity of the money supply. Thus money which had been relatively idle before now began to move from hand to hand, as the loan money was used for specific purposes; and the longer the boom continued unabated, the greater was the demand on the part of the public for loan money, the greater the need of the banks to sell down their investment portfolios to supply the loan demand, and the faster the money supply turned over.

In practice of course, the banks followed both procedures mentioned above. As Chart III indicates, total Bank Credit from 1949 has risen from roughly $160 billion to $265 billion, whereas the holdings of governments of the Federal Reserve and all banks have declined from $100 billion to about $95 billion, and whereas loans have increased from under $50 billion to over $140 billion.

Over-capacity Plus Tight Money

In a dynamic economy, two things will eventually happen:

(1) Productive capacity will eventually be increased to the point where the needs of the consuming public can be taken care of, and in fact may be less than the ability to supply.

(2) Credit expansion will reach a point where it becomes relatively difficult to continue to support it out of the banking resources of the community.

As private credit becomes a greater and greater proportion of total credit, a new volatility enters the picture. *This type of credit is much more sensitive to changes in economic conditions.* Credit extended by the banks to the government, i.e. in the form of purchases of government bonds by the banking system, never historically collapses itself. The way it is worked out is by being replaced over a period of time by loan credit. But private loan credit has characteristics which make it self-collapsible. One reason that government type credit expansion does not collapse is that it is an impersonal type of credit expansion, and the service of the debt at least in countries like Canada and the United States is never in doubt. It is true also that government debts once incurred are never liquidated to any great extent: the community as a whole over a period of 10 to 20 years of inflationary background of boom and prosperity simply grows up to the debt.

On the other hand private debt is much more tricky. It can and does become over-extended. People and corporations can assume burdens which in retrospect are too great for their resources to handle. In late boom phases, the typical result is that costs of borrowing rise sharply, and also the terms of borrowing steepen. What was formerly easy to get as a loan at 4% payable in 36 monthly instalments, now becomes 5% repayable in 24 monthly instalments, or 6% in 12, depending on the tightness of money. At times even, money is just not available at any price.

In the past, periods of expansion of private credit have been followed by periods of contraction, and without stopping to enquire into causes, these periods of expansion and contraction have been coincident with periods of good and bad business, the so-called business cycle. In practice when credit gets over-extended, a period of time is needed to bring credit back into line with the sustainable long-term rate of growth, or secular trend of business development.

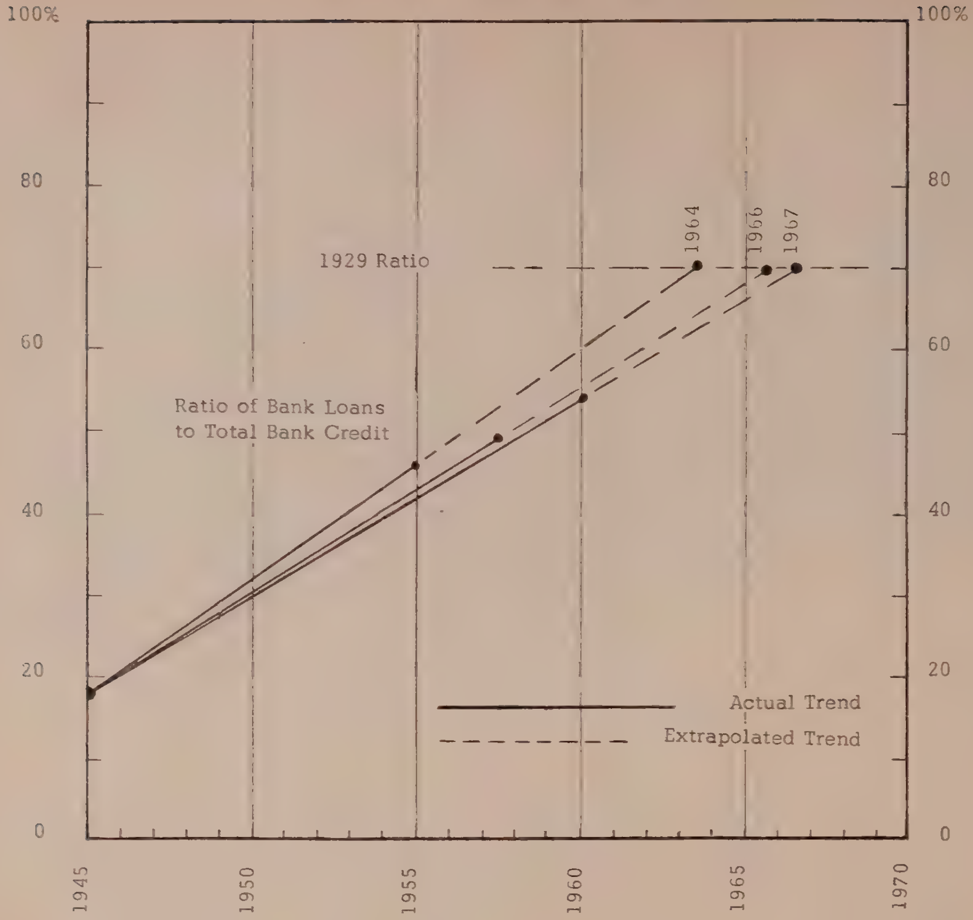
This period of consolidation affects business because the consumer for instance who borrows from tomorrow's income to pay for today's automobile, now finds that his efforts must be applied to paying off that amount of money, during the major part of which time he will not be in the market for more time-purchases until his financial position is adjusted to the new realities of income and debt as he sees them. Thus just as business got an extra fillip when the public decided to go into debt more heavily by using tomorrow's income capitalized to make today's purchases of durable consumers goods and housing, now business lapses into the doldrums, while the public decides to use today's income to pay down the large debts incurred against tomorrow's income.

The Dangers from Inflation

Paradoxically, inflation presents two very real, but quite conflicting dangers. Which of these is the more

Chart IV

Bank Loans vs. Total Bank Credit



important will depend on the individual circumstances surrounding the state of the economy at any time.

First, there is always the danger that price inflation will get out-of-hand, that the monetary and fiscal authorities will be unable to control or stop the rise in prices, that money will lose its value, and that finally the public will lose confidence in its "currency" and will try all means possible to get rid of money for tangible goods, or for other moneys considered more stable and desirable (Gresham's Law).

History is full of examples of this kind, but one needs only to consider the rampant inflation in Germany after World War I, as well as the fairly advanced forms of currency inflation in such European countries as France and Italy, and in South America.

Generally speaking however the countries whose banking and fiscal traditions and institutions have been based on Anglo-Saxon banking customs have avoided the excess of monetary inflation that other countries have experienced. In time of war of course, monetary inflation becomes inevitable, but when peace conditions are again restored, the shrieks against "money tinkering" become a hue and cry sometimes quite out of proportion to the supposed evils. This tradition is closely allied with the concept of the overwhelming importance of a balanced fiscal budget. A typical example is in the United States at the present time where any move to increase the overall government debt level as much as 1% is viewed by Congress with the greatest suspicion, whereas between 1939 and 1945 the federal debt was increased about 1,000%.

It is becoming clear however that modern governments in both the United States and Canada are becoming more and more indoctrinated with the twin medicines of fiscal deficits and debt monetization as conscious tools of economic policy, particularly to stimulate recovery during a recession. (Debt monetization is a policy whereby the central bank and the banks of the system increase their holdings of government bonds which the country issues to finance the deficit).

However, in the United States and Canada it appears unrealistic to fear the dangers of a runaway inflation and we do not believe investment policies should be geared to such probabilities.

The major danger from inflation, as we see it, although it is quite unfashionable with economists at the present time, is the possibility of inflation producing short-run deflation.

As we have seen above, there has come about in the last 15 years a considerable transformation in the nature of our credit structure. In 1945, the basic money supply was supported by a credit structure which was three quarters public (government) debt and one quarter private debt. In 15 years the picture has changed to the point where the private debt structure in the banking system is close to 55% of total bank credit (bank loans as a percent of loans and investments).

Chart IV herewith shows the ratio of bank loans to total bank loans and investments (bank credit) for all banks in the United States with projections forward at various periods based on data for the end of 1955, the middle of 1958 and the end of 1960. These projections are "straight line" extrapolations such as would have been made at these dates based on data then available, and purport to show *when* bank loans might return to the same percentages of total bank credit as they were at in 1929 and generally in the late 1920's.

A word of caution is needed here. The absolute ratio of 70% which was the ratio for 1929 need not be considered an absolute maximum. In fact the ratio in 1919-20 was considerably higher. One of the factors to consider as well is the level of required reserves of member banks. When these are high, as for instance in 1937, it would be quite impossible for banks to reach as high a percentage as when reserve requirements are low. Currently reserve requirements are in an in-between stage: neither high nor low. But the tendency for reserve requirements since the early 1950's has been to be reduced. As requirements are reduced the effect is to stretch out the possibilities of further loan expansion. This is apparent in the chart as well where the tendency has been since 1955 for a slowing up in the general rate of expansion in bank loans.

As this percentage of private credit which is at the back of the money supply increases, it is quite clear that the risks of a collapse at any time in loans, and consequently in the money supply, rise, especially as the factors which can cause a temporary decline in private loans are very subject to short-term influences such as short-run expectations of earning power and debt position coupled with ability to borrow easily or not.

History shows that *big slumps have been the result of liquidation of large private debt structures.* History does not show slumps caused by liquidation of public debt structures. The larger the private debt structure relatively, then, the greater the danger of liquidation, or deflation.

"WALL STREET ANALYSTS have regained their old, stentorian authority of pre-crash 1929, and Wall Street super-salesmen have polished up their merchandising" —*Newsweek.*

Humor Strides Down Wall Street

J. P. Morgan and other now silent stalwarts of Wall Street are probably turning in their graves as they note full-bodied humor striding into the financial area.

Investment houses, not especially noted for the whimsical side of life (at least not during office hours) are appealing to the wry side of investors and potential investors.

For not only is "Humpty Dumpty" and his delightful playmates being quoted in market letters (see editorial, *The Financial Analysts Journal,* September-October 1961), Bache & Co.—no Laurel and Hardy team—has headlined an ad: "Never on Sunday" (the title of a somewhat racy motion picture). Goodbody & Co., another firm whose partners presumably are not related to the Marx Brothers, is in the act. Then, of course, "The Gutman Letter" has long been known to dish up pure entertainment as well as an occasional look at the market. But then the author, a wise investment counselor, is also conversant with beatniks.

Now comes along Dreyfus & Co. (see accompanying cartoon). This drawing was one of six occupying a full newspaper page. And the terse conversation between these upper-crust ping ponging university Colonel Blimps goes: ". . . I say, old chap . . . who handles your investments? . . . Investments? Oh . . . uh . . . Dreyfus and Company . . . Why old boy? . . . Ah! . . . they've a fantastic view of the harbor . . . boats and all that!" The punch line under the accompanying cartoon was: "Really?"—undoubtedly pronounced "R*h*ally."

"I say there, old chap . . ."

But not willing to let the pixy sense of humor halt there, the ad then states: "In addition to the 'boats and all that' we have complete brokerage facilities and a reasonably hardworking Research Department."

Shades of Bill Shakespere's Bottom, Falstaff and Britannia's impish P. G. Wodehouse. Wall Street has found its funny bone. Whither next!

Typical of advanced metallurgical techniques developed and applied by Texas Instruments is a unique method by which four different metals — each with specific desired qualities — are pressure-bonded into one economical strip of metal.

How TI technology combines unlike metals to benefit you!

IN YOUR HOME OR YOUR AUTOMOBILE, in industry and national defense, an exclusive Texas Instruments process of metallurgically bonding together dissimilar metals solves thousands of basic material problems. MULtiLAYER* products utilize the best properties of several materials to obtain from *one* metal functional qualities exactly suited to specific tasks.

One MULtiLAYER product, for example, combines the high thermal conductivity of copper with the anti-corrosion properties of stainless steel to make heat exchangers for missiles and supersonic aircraft. Other MULtiLAYER materials perform specialized tasks in diversified applications ranging from household and industrial thermostats to automatic chokes for automobiles.

This TI technology makes available more than 600 MULtiLAYER combinations in sheet, strip, wire, and tube forms from which the designer may choose the precise metallurgical properties his product demands . . . strength, flexibility, springiness, weight, weldability, electrical and thermal conductivity, corrosion resistance, and many more.

It is this capability for matching skills with customer requirements that keeps TI at the forefront in the areas of materials, components, assemblies, and subsystems for defense and industry.

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Management's Relations with Security Analysts and the Business Press

(Permission was granted the Financial Analysts Journal, by National Industrial Conference Board's "The Conference Board Business Record" to reprint, from its August issue, several hundred words from its most interesting survey on "Management's Relations with Security Analysts and the Business Press"—Editor).

THE FULLEST POSSIBLE COOPERATION is extended to security analysts and members of the business press by most of the 215 manufacturing companies participating in the latest Conference Board survey of business opinion and experience. Executives of many of these firms express the belief that they have a basic obligation to their stockholders to try to keep the financial community fully informed and to disseminate company information in as candid and impartial a manner as possible. This kind of cooperation is often thought to benefit the company in such ways as the following:

- Gives stockholders, customers, and employees a better understanding of the company's operations
- Provides for more accurate market appraisals of the value of the company's stock
- Helps the company get additional financing, when necessary

Several respondents say that they are flattered by visits from members of the financial community, and further, that they learn a great deal from these interviews. A few even make a practice of going to the analysts rather than waiting for the analysts to come to them. Says the financial vice-president of one such company:

"For the past several years, our company has followed the practice of talking to small groups of financial analysts at luncheon meetings where we are the host. The company is represented by the president and myself."

STOCKHOLDERS FIRST

Most of the executives who cooperate with financial analysts and the business press emphasize that company policy requires that no more information be provided to these groups than would be available to any stockholder. News regarding mergers, dividends, and stock splits, in particular, must be released in a public announcement before being discussed with any individual member of the financial community. Aside from the equity involved, a number of respondents point out that this protective policy adheres closely to the views of the New York Stock Exchange and the Securities and Exchange Commission.

Few respondents have encountered any difficulties as a result of their meetings with analysts or business reporters. In those cases where problems have occurred, they have often been minor. Some executives, however, report that they are more careful in their interviews with reporters than they are with security analysts. In part, this cautious attitude stems from the nature of the reporter's job, which may entail not only the use of direct quotes but also editorial emphasis on selected aspects of the company's operations.

Another reason given by respondents for being more receptive to the security analyst than to the business reporter is their belief that the former is more likely to respect confidential information with which he may be entrusted.

In this connection, a steel company vice-president states: "We have found from experience that reputable financial analysts do respect opinions, projections, and forecasts given to them in confidence. Unfortunately, we cannot say the same for the business press."

In their dealings with financial analysts, a few firms have encountered problems similar to those mentioned by other companies in connection with the business press. The treasurer of a machinery company, for example, describes one such incident as follows:

"A financial analyst published a rather sensational report on our company. It was purported to be based on an interview with management, but apparently was based on information gleaned at a stockholders' meeting and considerably embellished. This incident brought the company's name to the attention of many who had either ignored or never heard of it, resulting in a flurry of inquiry. We mailed a letter to all stockholders pointing out the overstatements and errors included in the analyst's report."

Both analysts and reporters consume a great deal of executive time in some companies. Few respondents have found an effective solution to this problem, other than limiting the number of interviews granted. The president of an instruments company, noting that his own solution is not well received, makes this comment:

"Financial analysts and reporters are among my biggest headaches. The attitude of many financial analysts who call me long distance and keep me on the phone for an hour irks me greatly, especially when they take an attitude of resentment when I necessarily shut them off to get back to more important business."

SAFEGUARDS

Since most companies have not encountered any serious difficulties in their relations with security analysts or business reporters, many have felt no need to set up any safeguards in this connection. But others, particularly those that have had unfortunate experiences, report that they have taken special precautions to prevent any future difficulties of this kind.

Only seven of the companies surveyed have written policy statements formalizing the manner in which company information is to be disseminated to outsiders.

Much of the content of these policy statements is devoted to delineating the areas of responsibility for such news dissemination. The policy statement of an aircraft company, for example, indicates that release of financial information directly affecting the company as a whole, as well as the release of information to stockholders, is exclusively a corporate rather than a divisional responsibility.

Similarly concerned with centralization of control, the chemical division of a large corporation has a policy statement that has as one of its purposes "to avoid one division adversely affecting another and to present a uniform front to the public." As a guide, this policy statement contains a list of items which are not regarded as over-all corporate matters and which consequently would not require parent company clearance. These items are:

- All public announcements connected with the sale of division products
- Announcement of personnel appointments below the division executive head
- Technical subjects that do not encroach on the activities of other divisions
- All matters that relate to local community relations

On the other hand, the same policy contains a specific warning about "making statements which might associate the company or any of its divisions with a political

Pacific Gas and Electric Company

DIVIDEND NOTICE
COMMON STOCK
DIVIDEND NO. 183

The Board of Directors on September 20, 1961, declared a cash dividend for the third quarter of the year of 70 cents per share upon the Company's common capital stock. This dividend will be paid by check on October 16, 1961, to common stockholders of record at the close of business on September 29, 1961.

K. C. CHRISTENSEN,
Vice President and Treasurer
San Francisco, Calif.

P·G·and E·

OUTBOARD MARINE

OUTBOARD MARINE CORPORATION

DIVIDEND NOTICE

A cash dividend of twenty cents (20c) per share on the Common Stock of the Company has been declared by the Board of Directors, payable November 24, 1961, to stockholders of record November 10, 1961.

R. F. WALLACE, Secretary

October 26, 1961

Creative Capital Fund
Seeks
Creative Analyst—
Deal Makers

We are a large Capital Fund active in all phases of acquisitions, private financing and ventures. We have high regard for imaginative, creative thinking, and for thorough-going incisive, constructive research in the evaluation of opportunities brought to us by others and generated internally. We have a small productive staff who have substantial leeway to pursue ideas and ample authority to advance transactions.

We are now seeking two men to assist our Director of these activities. Ideally, the men we choose will combine investment banking, new business or buying department experience with background in the evaluation of common stocks. Other possible combinations include feasibility studies for consultants, private placement purchase responsibilities, venture capital direction, etc. The more experienced man (probably with about ten years experience) will qualify as Associate Director. Another man will be chosen as Senior Analyst.

Candidates will be the kind of men happiest in a vigorous, forward-looking atmosphere, where precedent and the conventional are not the primary tests, and new approaches and new ideas are heavily emphasized. They will be men who respond enthusiastically to opportunity and to acting for and as the principal in a decision-making capacity, rather than continuing in an agency or service function, or being subject to committee administration. Of course, the men we desire will have tangible evidence of achievement.

Salaries (and the ubiquitous fringe benefits!) will be substantial — and the scope for further reward is, we think, exceptional. If you are such a man, write **in adequate detail** of your experience and abilities, noting your present **salaried** compensation. If you know of such a man suggest that he do.

All inquiries will be treated in complete confidence. Our organization knows of this advertisement.

Room 304, 114 East 40th Street
New York 16, N. Y.

or other public issue," since the division cannot dissociate itself from the parent company.

A few of the policy statements used by companies participating in this month's survey also specifically mention the individual or individuals to whom requests for information from outsiders must be referred.

Most companies, while lacking formal policy statements specifying those individuals who are authorized to disseminate information on behalf of the company, nevertheless report that such assignments are "well understood."

It is the policy of many of the companies surveyed to avoid certain topics that they regard as "competitive information" in discussions between company officials and analysts or business reporters. Information that respondents usually withhold because of the possible value to competitors include:

- Breakdowns of sales and earnings by division or product line
- Sales to individual customers
- Market share by product
- Dollar value of backlog or bookings
- Monthly sales and earnings reports
- New manufacturing processes or research findings
- Merger or acquisition proposals
- Forecasts of sales or earnings

Concerning forecasting, some respondents indicate that they are loathe to speculate about the future in any event, and prefer to restrict their own comments to the past or the present, leaving any projections of future performance to their interviewers. They point out that an analyst or reporter is often able to make his own projections on the basis of plant visits, inspections of research and engineering facilities, and a general discussion of future prospects with company officers.

Frequently mentioned as a cause of misunderstanding between the financial community and the company being interviewed is what some respondents consider to be the lack of proper orientation on the part of many analysts and reporters.

The president of a machinery company, for example, states:

"There is today widespread awareness of the impact that scientific research can have on technological development. There is not, unfortunately, an equal awareness of the great expenditures of time and money generally required to translate a scientific advance into a commercially successful product. This often leads to sensationalized reporting that may have adverse repercussions. Some examples are the overselling of atomic energy a few years ago and the current excitement about space exploration. All financial writers and analysts cannot be trained engineers, but we feel it is now essential that their training should include orientation in the history of technology. This would give them an appreciation of the many complicated factors affecting industrial growth and would enable them better to understand and report the facts that industry and business are anxious to provide to the public."

When other safeguards fail to prevent the publication of distortions, inaccuracies, or information given in confidence, some respondents say they "follow up vigorously." Several executives report that any abuse at the hands of a reporter or analyst is recorded and he is refused any future help. Other executives have gone to an interviewer's superior with their complaints, written corrections to the publication involved, or have confronted the interviewer himself with what the company regards as a more accurate presentation of the facts.

Some executives are pessimistic about the possibility of preventing misrepresentation of facts supplied to outsiders. The president of a textile company, for example, says: "We recognize that as long as we reserve the right to disclose as much or as little as we please, editors (under the guise of freedom of the press) will reserve the right to say what they please."

Not all companies, however, put the onus on the outside representative. Thus, some share the view of one company spokesman who states: "We tend to regard misrepresentation as a result of poor communications on our part."

GERALD J. FUCHS
G. CLARK THOMPSON
Division of Business Practices

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF

FINANCIAL ANALYSTS JOURNAL, published bimonthly at New York, N. Y., for October 1, 1961.

1. The names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher.

THE FINANCIAL ANALYSTS FEDERATION, 82 Beaver Street, New York 5, N. Y.

Editor, PIERRE R. BRETEY,
25 Broad Street, New York 4, N. Y.
Managing Editor, WARREN BURNS,
82 Beaver Street, New York 5, N. Y.
Business Manager, JOHN STEVENSON,
60 Wall Street, New York 5, N. Y.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

The Financial Analysts Federation,
82 Beaver Street, New York 5, N. Y.
George S. Kemp, Jr., President,
Box 1758, Richmond 14, Virginia.
David D. Williams, Executive Vice President,
Box 116, Detroit, Michigan.
George M. Hansen, Executive Secretary & Treasurer,
331 Auburndale Avenue, Auburndale 66, Mass.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are:
None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required by the act of June 11, 1960 to be included in all statements regardless of frequency of issue.) 12,000.

WARREN BURNS,
Managing Editor

Sworn to and subscribed before me this 11th day of September, 1961.
(SEAL)

ROSALIE F. McGLEW
Notary Public, State of New York
No. 30-7833000 Qualified in Nassau County
Certificate filed in New York County
Term Expires March 30, 1962.

MORE GROWTH IN PUGET POWER COUNTRY

NATION'S LARGEST TOTAL-ELECTRIC DEVELOPMENT IN PUGET'S SERVICE AREA. 3,500 "Gold Medallion" homes will all feature electric heat, electric cooking and electric water heating. Puget residential customers own an average of 15.1 electric appliances, use 2½ times more electricity each year than the national average usage.

NEW INDUSTRIAL PARKS ATTRACT MORE INDUSTRIES TO PUGET'S AREA. Above is a portion of Overlake Industrial Park, showing new United Control Corp. and Simpson Timber Co. facilities. Others include Andover Industrial Park, being developed by a subsidiary of Puget Power, where national firms such as General Electric Company and Abbott Laboratories are erecting large new plants.

INDUSTRIAL & COMMERCIAL REVENUES ALSO RISING STEADILY

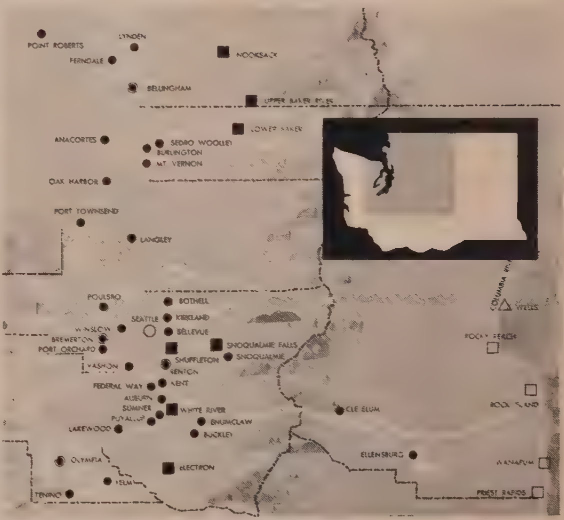
	1956	1957	1958	1959	1960
Industrial & Commercial Revenues	$ 9,379,637	$10,118,176	$10,851,550	$12,167,161	$14,117,281

Industrial and commercial revenues have increased at an average of 10.4% per year, and these also are now 50% greater than they were five years ago.

RESIDENTIAL REVENUES FORM SOLID BASE FOR RISING TOTAL

	1956	1957	1958	1959	1960
Residential Revenues	$14,201,479	$15,372,459	$16,204,731	$18,321,693	$21,068,573
Total Revenues	$25,212,731	$26,983,317	$28,638,804	$32,385,103	$37,137,307

Residential revenues have increased at an average of 10.3% per year, over the past 5 years, and these revenues now are 50% greater than they were in 1956.

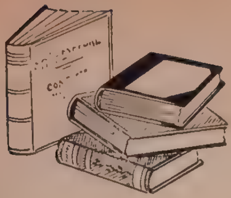


SIXTY PERCENT OF WASHINGTON STATE'S POPULATION GROWTH FOR THE LAST 10 YEARS HAS TAKEN PLACE IN PUGET POWER'S SERVICE AREA. Nearly one million people now live in the 270 communities served. Use of electricity per residential customer is growing, too, and Puget Power stands second among all the investor-owned utilities in the entire nation in this vitally important growth factor.

PUGET POWER

PUGET SOUND POWER & LIGHT COMPANY

Serving 830,000 people in 270 communities of Western Washington • **Executive Offices:** 1400 Washington Building, Seattle 1



BOOKS for ANALYSIS

Wall Street, A Pictorial History. By Leonard Louis Levinson. Ziff-Davis Publishing Co., New York, N. Y. 376 pages (9 x 12 inches). $17.50.

Reviewed by Warren Burns

Here's the ideal Christmas gift (and it's attractively box packaged) for men and women of finance to distribute at this year's Holiday Season.

In lucid style and interesting pictures it is the story of the beginning of our country and the ever-fascinating history of men, money and Wall Street.

The author says he spent five years reading, writing and selecting pictures for this book. And one can well believe it, for within its pages is not solely a history but an interesting textbook on how the stock markets operate and the human element that makes tickers "talk." In fact the biographical sketches, with photos, of those who have made *the* Street what it is, as well as those who are currently "writing" today's history in its granite caverns, could make a book in itself. And the attention which is devoted to explaining the inner workings of the brokerage houses alone is well worth the price of this book. As the publisher says:

"It is more than the story of America and its money. It is a concise and valuable account of the rise of the United States to world power in industry and finance, and of Wall Street's role as the commercial capital of the world."

Chapter titles are often misleading, but in the case of "Wall Street, A Pictorial History," this reviewer believes they are well "headlined"; and they read: The Street; In the Beginning; The First Revolution; The Federal Period; A New Century; Financial Growth; National Influence; The Second Revolution; Turmoil and Panic; The Age That Had Everything; Titans, Trusts and T. R.; The First World War; Boom and Bust; The Third Revolution; The Second World War; Prosperity and Progress; Wall Street Today; and Looking Ahead.

A Slight Case of Myopia?

The only flaw in this magnificently presented book, and a complete mystery to this reviewer, is how the author roamed Wall Street and its surrounding area and never bumped into a Financial/Security Analyst. There are more than 2,600 Financial/Security Analysts in the Wall Street area alone—members of the 24-year-old chapter of *The New York Society of Security Analysts.* And, incidentally, this number includes some charming female Analysts.

Moreover, many of these Analysts are partners in the brokerage houses which the author mentioned. Then too, the New York Chapter has its own quarter-of-a-million-dollar Clubhouse at 15 William Street (just a silver dollar's two-minute roll off Wall Street). Captains of industry from practically every company listed on the New York Stock Exchange — and many from the other exchanges — speak to these Financial Analysts every working day of the year at a luncheon in their spacious Clubhouse over Wall Street's most elegant restaurant, the Coachman—which incidentally, handles the catering for the Analysts.

How, just how did Author Levinson miss this vital segment of the financial community? Omission of even a mention of these Analysts, who daily advise their firms in the expenditure of hundreds of millions of dollars here and abroad, would seem extremely difficult to explain.

The conclusion must be that he didn't miss them, but chose to ignore them. Why? And like the scalp-happy Indians of centuries past who tried to scale the wall along Wall Street: How?

AMAX

American Metal
Climax, Inc.

COMMON STOCK
Dividend No. 144

The Board of Directors has declared a dividend of Thirty-five Cents (35¢) per share on the Common Stock payable December 1, 1961 to stockholders of record at the close of business on November 21, 1961.

D. J. DONAHUE,
Treasurer

SOUTHERN NATURAL GAS COMPANY

Birmingham, Alabama

Common Stock Dividend No. 91

A regular quarterly dividend of 50 cents per share has been declared on the Common Stock of Southern Natural Gas Company, payable December 14, 1961 to stockholders of record at the close of business on November 30, 1961.

W. S. TARVER,
Secretary

Dated: October 28, 1961.

UNION CARBIDE

A quarterly dividend of ninety cents (90¢) per share on the outstanding capital stock of this Corporation has been declared, payable December 1, 1961, to stockholders of record at the close of business November 6, 1961. The last quarterly dividend was ninety cents (90¢) per share paid September 1, 1961.

Payment of the quarterly dividend on December 1 will make a total of $3.60 per share paid in 1961. In 1960, $3.60 per share was also paid

John F. Shanklin
Secretary and Treasurer
UNION CARBIDE CORPORATION

You Only Have to Get Rich Once. By Walter K. Gutman. E. P. Dutton & Company, New York, N. Y. 252 pages. $4.50.

Reviewed by Alan C. Poole
Hemphill, Noyes & Co.

When reading *The Gutman Letter* one gets a great deal of interesting reading but very little investment information out of the first part; the investment information comes at the end. The same principle applies to his book, except that more than the last half of it gives a great deal of information, unconventionally presented but nevertheless interesting and very educational—especially to the individual who wonders how Mr. Gutman was financially successful other than through his ability to write the most entertaining market letter on Wall Street.

In the first part of Mr. Gutman's book the reviewer particularly enjoyed the chapter, "Dr. Jekyll and Mr. Hyde in Economics." Here, as in part of the chapter "Management and the Investor" where Mr. Gutman tells about his friend "Dr. Ted Jekyll," one can readily see how the author has been able to appraise management successfully. Management, in the reviewer's opinion, comes first in evaluating a company and Mr. Gutman's techniques are well worth following.

Mr. Gutman's dissertations on sex and Wall Street add some spice to his book. This reviewer has never understood women and doubts very much whether the author does. Nevertheless, his reasoning for buying stocks in 1949 because he felt the business recession would be defeated by the purchasing power of women was an interesting observation that turned out to be profitable.

And also on the entertaining side is an observation which he had made previously in one of his Weekly Letters: "There is nothing like the ticker tape except a woman—nothing that promises hour after hour, day after day, such sudden developments, nothing that disappoints so often or occasionally fulfills with such unbelievable passionate magnificence."

In the second part of Mr. Gutman's book he turns to the more serious aspect of investments. There is a lot of good material in this section that is comprehensible to the layman investor and yet presents some original ideas for the Financial Analyst. Necessarily he must follow a style of conventional presentation but, from time to time he breaks out into that readable Gutman style as he takes a dig at International Business Machine as a collector's item; writes a section of an annual report as the facts might exist, but as it never would be written; and gives several case examples of his own transactions both successful and unsuccessful.

In the first chapter of his book, Mr. Gutman described how people feel rich, not necessarily through acquiring wealth but through achievement, happiness, excitement and enjoyment. The first section of Walter Gutman's book made me feel rich

Santa Fe
"Atchison"
. . . always on the move toward a better way!

in enjoyment, while the second half of his book has already proved profitable in a lesson it taught me.

For either the Financial Analyst, the investor, or anyone interested in learning more about the aspects of the world in which we live, "You Only Have to Get Rich Once" is *must* reading.

* * *

FORTUNES IN SPECIAL SITUATIONS IN THE STOCK MARKET. By Maurece Schiller. American Research Council. Larchmont, N. Y. Distributed to the trade by the Citadel Press. 134 pages. $5.95.

Maurece Schiller has done a very workmanlike job on his book on *Special Situations in the Stock Market.* Not only has he outlined in detail a scientific analytic approach to evaluate any such situations that might be uncovered but he has included a wide variety of types of situations.

New era special situations; old companies in new fields; unique status special situations and large cash asset companies. He has covered trading procedures in these cases to include arbitraging, hedging, and the use of options. Finally he devotes quite a bit of discussion to: liquidations; mergers and acquisitions; and reorganizations and recapitalizations.

The first part of Mr. Schiller's book tends to theorize to quite an extent, especially when he discusses corporate action. It is the reviewer's feeling that the presentation he gives would only be of value to someone with so-called "inside information" on a company, although he gives some insight on how to track down

ROCKWELL STANDARD DIRECTORS PERSONALLY CHECK PROGRESS ON NEW TWIN-JET AERO COMMANDER AT OKLAHOMA CITY MEETING . . . DECLARE REGULAR DIVIDEND

The Board of Directors has today declared a regular quarterly dividend of fifty cents (50¢) per share on the Common Stock of the Company, payable December 10, 1961, to shareholders of record at the close of business November 16, 1961.

A. A. Finnell, Secretary
October 27, 1961

Rockwell-Standard serves:
Transportation • Construction
Agriculture • Petroleum
Public Utilities • General
Industry and Government

Rockwell-Standard produces:
Axles • Transmissions
Torque Converters
Leaf and Mechanical Springs
Bumpers • Cushion Springs
Brakes • Forgings • Stampings
Grating • Universal Joints
Executive Aircraft
Lighting Standards
Gas and Liquid Filters

ROCKWELL-STANDARD CORPORATION
CORAOPOLIS, PENNSYLVANIA

FAMILY FINANCE CORPORATION

HIGHLIGHTS OF OUR THIRTY-FOURTH YEAR OF SERVICE

During each week of our thirty-fourth year of service more than eleven thousand families let Family Finance help them solve pressing financial problems.

The increase in the total number of operating offices to 364 has been coupled with corresponding increases in total volume, outstanding receivables, income, earnings and in number of loans. This is indicative that—despite its conservative policy—Family continues its steady, stable pattern of successful growth and fulfillment of its responsibility to the public it serves.

HIGHLIGHTS OF 1961

OPERATIONS	June 30, 1961
Total Loans Made	$281,826,260
Number of Loans Made	590,572
Average Loan Made	$ 477
Notes Receivable at Year End	$180,256,044
Average Loan Balance	$ 399
Number of Employees	2,337
Number of Offices	364
EARNINGS AND DIVIDENDS	
Revenue	$ 41,643,438
Operating Expenses	$ 22,753,128
Taxes on Income	$ 5,690,000
Earnings for Common Stock	$ 6,899,586
Shares of Common Stock	2,334,268
Earnings Per Share	$ 2.96
Dividends Paid Per Share	$ 1.60

Copy of 1961 Annual Report available on request

FAMILY FINANCE CORPORATION
201 W. FOURTEENTH STREET
WILMINGTON 99, DELAWARE

existing rumors on certain stocks. A good part of this section of the book has value only to the professional.

Later in his book, however, Mr. Schiller presents methods for evaluating existing situations where information regarding mergers, liquidation, reorganization, etc., is readily available. Using several case studies he shows how this information may be used profitably by the investor.

This book is unique in that it has made a very thorough approach to a very special phase of investment activity; but by doing this it has limited its readership to professionals, plus a few people outside the financial world who have been thoroughly schooled in the art of investing.—*Alan C. Poole*

* * *

READING FOR PLEASURE

(Editor's note: This, the third—and indeed a fourth combined—review will not add one iota of financial knowledge for our readers, but is presented strictly for delightfully relaxing reading).

MARY, QUEEN OF SCOTS. By N. Brysson Morrison. The Vanguard Press, Inc., New York, N. Y. 286 pages with index and a family tree chart showing relationship between Mary of Scotland and Elizabeth of England. $5.50.

The historical and fascinating maelstroms of past centuries' royal European families have again been brought to light, this time in the tragic life of the Queen of Scotland and Dowager Queen of France—one and the same — with another book about "Mary, Queen of Scots."

The author, Miss Morrison, has obviously done painstaking research, and the result is highly informative and interesting. But this reviewer wishes she'd telescoped some of the chronology, and by that act putting her book into more readable form —assuming that the book is meant for general reading, as apparently it is.

By an unusual coincidence the reviewer has also just read another biography of a European lady of royalty: "Elizabeth, Empress of Austria," by Maureen Fleming (Schirmer). Author Fleming undoubtedly had similar access to dreary dates and long titles; but she had the refreshing instinct to push such aside and get down to the story.

However, it may be somewhat unfair to make a comparison here as Elizabeth's story was told as a semi-historical novel, while Mary's story is presented in a more factual manner. A matter of genre one might say, while recalling Author Fleming's quotation attributed to Dumas: "Historical novels are not only more interesting than history, but also more accurate. The novelist, if . . . an artist, gives you the whole drift of an epoch." *Also,* it's a matter of opinion; and Author Morrison obviously prefers the other approach. No quarrel.

Then too, the lives of these two legendary ladies of royalty were quite different. For Elizabeth, although tragedy was also part of her life, love and high adventure of the pleasurable sort was predominant, while Mary spent 19 years in an English prison and died on the scaffold, at the direct orders of her own sister.

Many a student of Scottish history has often pondered the great *if*: if Mary's ship, en route to France, had not been thrown by storm on English soil, what would have been the outcome of her life?; or had she returned to Scotland? Author Morrison puts the legendary quandry neatly:

"We now know that nothing could have been worse for Mary than the nineteen years of imprisonment she endured in England, but one wonders what her fate would have been had she arrived in France where her mother-in-law [shades of "Elizabeth, Empress of Austria"], who always hated her, was now the power behind the throne. Again, what hope lay for her had she returned to Scotland — there was no possible *modus vivendi* to bridge the distance between her and her restoration, and had she returned with foreign troops her people would have fought as they had fought in the past when their independence was threatened, 'like brute beasts'."

The world will never know.

—Warren Burns

REGULAR QUARTERLY DIVIDEND

The Board of Directors has declared this day

COMMON STOCK DIVIDEND NO. 109

This is a regular quarterly dividend of

27½¢

PER SHARE

Payable on Nov. 15, 1961 to holders of record at close of business, Oct. 20, 1961

KARL SHAVER
SECRETARY
Oct 5, 1961

COLUMBIA GAS SYSTEM

THE COLUMBIA GAS SYSTEM, INC.

PANHANDLE EASTERN PIPE LINE COMPANY

PANHANDLE EASTERN

TRUNKLINE GAS CO.

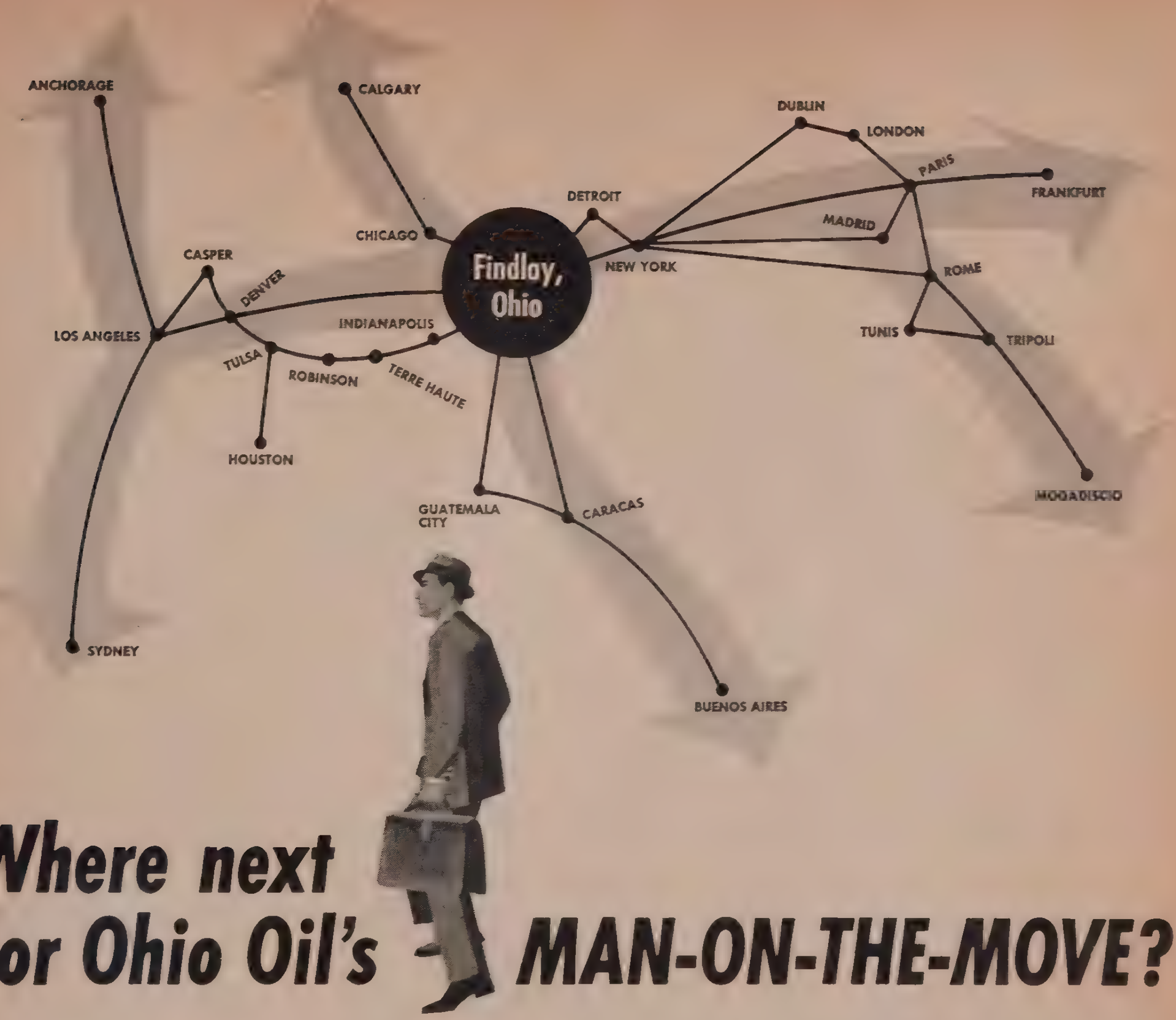
QUARTERLY DIVIDEND

50¢ per Common Share
(formerly 45¢ per Share)

- Payable December 15, 1961
- Record November 30, 1961
- Declared October 30, 1961

WILLIAM C. KEEFE,
Vice President & Secretary

Pioneer Long-Distance Transporter and Producer of Natural Gas



Where next for Ohio Oil's MAN-ON-THE-MOVE?

Among today's far-ranging oil men you'll find a growing number who represent a medium-sized major with headquarters at Findlay, Ohio, U.S.A.

More than a decade ago, while maintaining the fast pace of its domestic operations, The Ohio Oil Company ventured abroad in an exploratory program that now reaches to five continents.

Production of oil came initially in Canada. More recently, very substantial crude oil reserves have been discovered in Libya, and a pipe line to the Mediterranean is under construction. Petroleum sales and refining plans are nearing fruition in Spain and in Germany.

World-wide growth has reached the point that a wholly-owned subsidiary, Marathon International Oil Company, headquartered at Findlay, has been organized to co-ordinate overseas activities.

Ohio Oil men at work in the near and far places of the globe are making significant progress for a company-on-the-move at home and abroad.

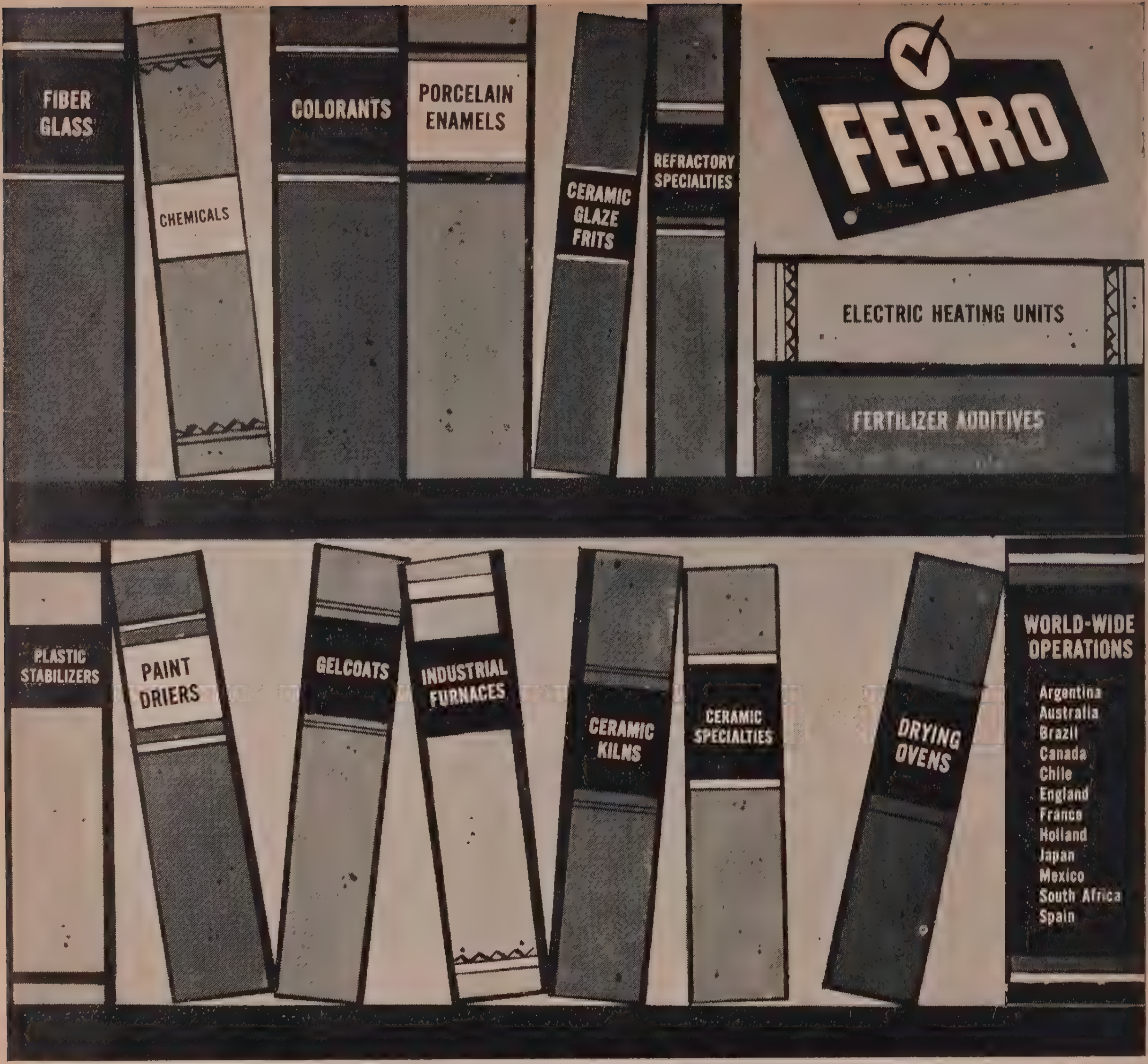
HIGHLIGHTS OF THE NINE MONTHS ENDED SEPTEMBER 30

	1961	1960
Total revenues	$263,863,000	$263,116,000
Net income	$ 27,609,000	$ 27,410,000
Net income per share	$1.94	$1.98
Dividends paid:		
Cash — per share	$1.20	$1.20
Common stock	2%	— —
Capital expenditures	$ 33,595,000	$ 48,066,000
Exploration expense	$ 18,594,000	$ 23,214,000

Shares of common stock outstanding (Excluding shares in Treasury: 1961—31,031; 1960—169,125)	14,257,338	13,832,050
Net crude oil and natural gas liquids produced—barrels	32,271,000	29,760,000
Crude oil refined—barrels	25,647,000	27,458,000

On November 7, 1961, the Board of Directors declared a dividend of 40 cents per share payable December 11, 1961, to shareholders of record November 17, 1961.

THE OHIO OIL COMPANY Findlay, Ohio • Marketers of **MARATHON** products



NINE MONTHS COMPARATIVE CONSOLIDATED SALES AND NET INCOME

	Nine Months Ended September 30	
	1961	1960
Consolidated Sales	$45,571,000	$47,243,000
Consolidated Income Before Taxes	$3,408,000	$4,442,000
Consolidated Income Taxes	1,732,000	2,278,000
Consolidated Net Income	$1,676,000	$2,164,000
Earnings Per Share on 820,232 Shares	$2.04	$2.64

(Outstanding September 30, 1961)

(The foregoing figures are subject to examination by our independent Certified Public Accountants.)

FERRO CORPORATION

4150 EAST 56TH ST. • CLEVELAND 5, OHIO

Romantic History of Our Dollar

(The following interesting account of our dollar's history was narrated recently, by the well-known traveler and author, Sheridan H. Garth, over The New York Times' Radio Station WQXR. Narrator Garth has traveled extensively throughout the world. He is Publications Editor of Thos. Cook & Son and author of "The Pageant of the Mediterranean," a background book for Americans—The editors).

How natural it is to consider the dollar as an American institution! Yet it had to travel widely, more than halfway around the world before it came to rest here in the United States.

The dollar's history can be traced to its origins in Europe two centuries before Columbus was born. In the landlocked province of Bohemia — which is now a part of Czechoslovakia — silver had been mined since the earliest Middle Ages. Near today's city of Jachymov stretches the historic valley of St. Joachim. In the 13th Century Bohemia originated a silver coin which soon circulated in neighboring Austria, whose merchants gave it the German name of St. Joachimsthaler, or "the coin from the valley of St. Joachim," and it came to be called a "thaler" for short.

The silver mines of St. Joachimsthal fell into the hands of Austria when Bohemia was annexed by that expanding state just after the time of Columbus. The thaler thus became a more widespread currency. Since the Hapsburg rulers of Austria were also the elected emperors of Germany, the thaler came into use by merchants of German trading cities such as Frankfurt, Augsburg and Nuremberg. In 1519 the thrones of Austria and Germany fell to a young king of Spain named Charles V. From his domains across the ocean in the Americas, particularly from Peru and Mexico, floods of gold and silver arrived in quantities unheard of in all history.

The skilled bankers of Germany and the Netherlands were employed to assay and process this new treasure into European coinage, and the value of the thalers was selected for the job. During that century, the thaler thus became the leading coin of Austria, most of Germany, and the Flemish Lowlands.

When King Charles of Spain mounted the Austrian throne, in 1519, he was also named Emperor of Germany and inherited control of almost all of Europe. For 40 years he was busy waging wars against the Turks, repressing religious struggles in Germany and Holland, fighting the rival King of France, and squandering his royal treasure.

During his long reign the Austrian thaler became the main medium of accounting back in his homeland of Spain. The Spaniards pronounced "thaler" as "dolar," and in the reign of Philip II special coins were minted in this denomination.

In the 1600's, the Spanish coins called "dolares" began arriving in the Caribbean as the principal item of value and exchange. Many of these fell into the hands of buccaneers and pirates, who had no money of their own. Through them, the Spanish coins began appearing in southern American colonies and in the West Indies. The buccaneers called them "pieces of eight," because they were worth eight reales, or royals. Sometimes they split the coins by chopping them into quarter bits, which they colloquially called "two bits," since they were worth two royals.

By the 1700's, the dollar had become the main currency of the Americas. About this time Mexico was allowed to mint dollar coins from her inexhaustible stores of silver. The dollar thus came to be closely linked with New Spain, as Mexico was then called.

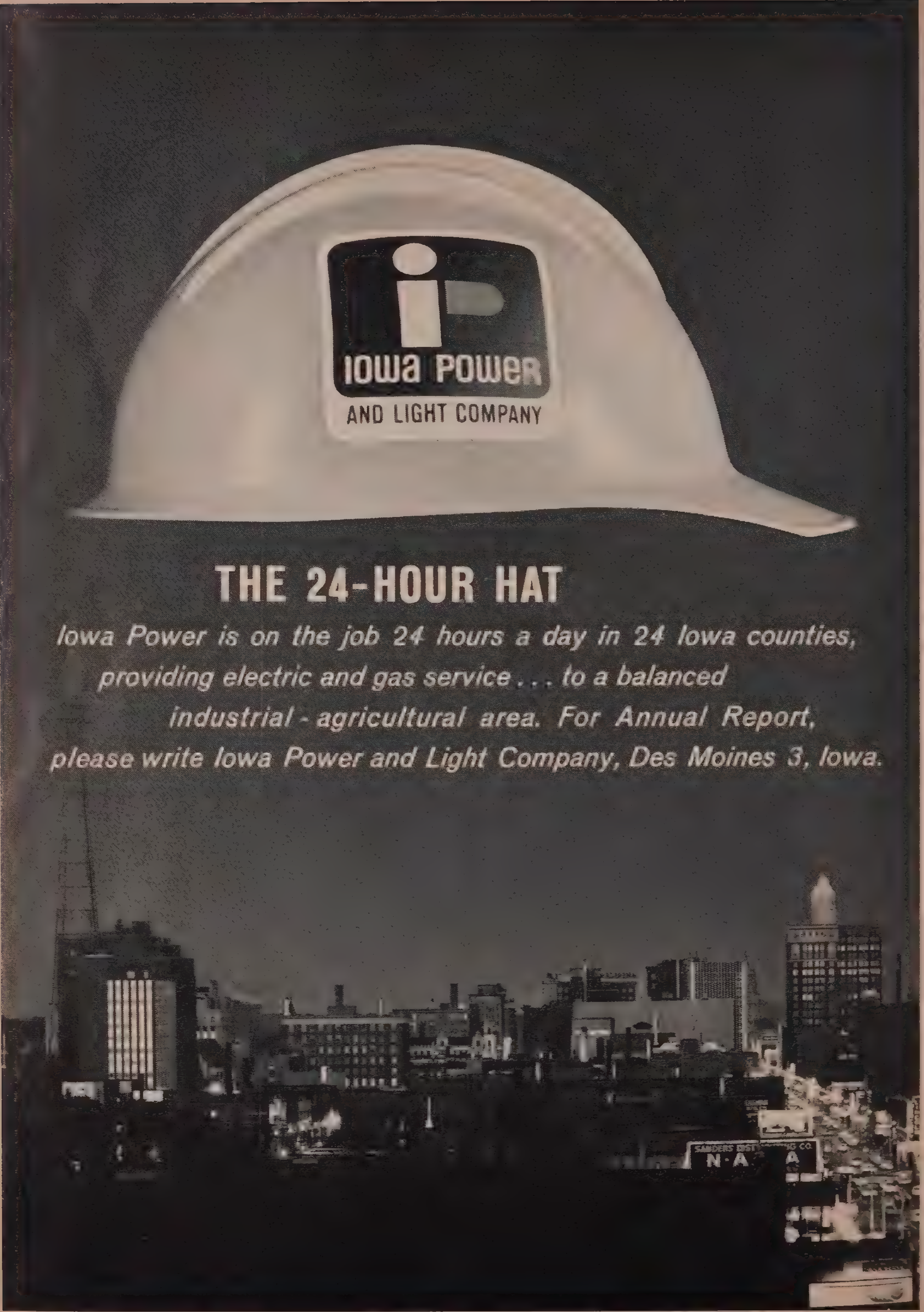
Mexico, the Spanish colony of New Spain, became the channel through which the dollar was carried on out to the Far East. Through her Mexican port of Acapulco, Spain extended her commercial ties across the broad Pacific to her colony in the Philippine Islands, by means of a single galleon that sailed every year. To Manila traders flocked from the marts of China and the Malay states, to buy Spain's export goods whose prices were quoted in silver dollars —or as they came to be called in Manila, "dollars mex." The term then was carried on to Canton, to Malacca, to the sultanates around the South China Sea. Consequently, in modern times, when the British moved into that productive area, they adopted the prevalent word "dollar" for the modern currency they established in Hong Kong and Singapore.

The Dollar Arrives in U. S.

During our colonial days the established currency, of course, was the pound, shilling and penny of Great Britain. Yet there was so little cash money available that the merchants in our port cities turned to the Spanish dollars, the pieces of eight, which they readily obtained in their commerce with colonies in the Caribbean. By the time the American Revolution came, it is estimated that more than half our money in circulation was this Spanish coinage. Consequently, when Alexander Hamilton, our first Secretary of the Treasury, was establishing our financial system in 1789, he adopted the well-known term, the dollar, as the logical name of our new federal currency. And the American dollar has remained ever since.

The dollar sign that we know so well came along with the Spanish silver dollars. It was the traditional emblem of the Spanish kings, assumed by them after years of fighting the Moors of Africa. The two upright bars in our dollar sign represent the Pillars of Hercules (the classic name for the Strait of Gibraltar) signifying that the coasts of Europe and Africa were united by the power of Spain, shown by the curving and triumphal ribbon holding them together.

Since the Strait of Gibraltar symbolized the bounds of the Old World, as well as the gateway to the rich new lands beyond the Ocean, it stood as a sign of divine authority, of value and of dominion to everyone who traded with these coins of hard money, minted from the treasure brought to Spain from the inexhaustible treasures of the Indies—the Americas.



THE 24-HOUR HAT

Iowa Power is on the job 24 hours a day in 24 Iowa counties, providing electric and gas service . . . to a balanced industrial - agricultural area. For Annual Report, please write Iowa Power and Light Company, Des Moines 3, Iowa.

Financial Analysts to Visit Japan, Maybe Hong Kong, 1962

Japan is the next port-of-call for approximately 80 Financial Analysts and 50 wives. And it's probable that the economic and investment activities in Hong Kong also will be probed.

Tentative embarkation date, by air, is next April 12 and the return May 5.

Aside from meetings with Japanese investment and banking executives, plus stock exchange visits, the management conferences and field trips, at this writing, include:

Yawata Iron & Steel Company; Sony Corporation (electrical); Hitachi, Ltd. (electrical); Tokyo Shibaura Electric Company; Matsushita Electric Ind. Co.; Mitsubishi Chemical Industries; Canon Camera Company; Asahi Glass Company; Nissan Motor Company; and Sumitomo Chemical Company.

Frederick A. Hesse, assistant secretary of Empire Trust Co., New York, is the trip chairman.

A member of the *Financial Analysts Journal's* editorial staff will be among the "voyageurs" and will report on the trip.

Exports to Japan from U. S. Reach Peak of $1,328 Million

Major gains are being made by the United States in trade and investments in the expanding markets of West Europe, Japan and Latin America, according to a recent observation made by Maj. Gen. George Olmsted (USAR-Ret.), before *The Financial Analysts Society of Detroit.*

He reported that U. S. exports to Japan are running ahead of imports from that country.

"Our exports to Japan last year reached a peak of $1,328 million, and are currently running about 40% over last year," the General stated, adding that "while our exports to that country were $900 million in the first half of this year, their exports to us amounted to $477, bringing the U. S. trade surplus to $432 million."

The most important development in American business at this time is that it's "going international," the speaker said. "While this is no new turn for certain companies that have operated abroad for many years, the movement has grown into a young giant in recent years. U. S. investments in the European Common Market countries nearly tripled between 1950 and 1959 from $636 million to $1.9 billion."

Gen. Olmsted said the fear that establishment of the European Common Market would freeze out other American exports has been groundless.

"Imports from the United States have increased over the 1958, 1959 and 1960 levels, as the Common Market economy has flourished," he said. "Imports from our country increased faster than imports from any other major trading area, and were 36.3% higher in 1960 than in 1958.

IN MEMORIAM

Charles G. Schaefer, 63, died Sept. 10 at his San Francisco home. Mr. Schaefer was associated with The First California Co., San Francisco investment firm, and was a member of The Security Analysts of San Francisco.

Prior to his First California connection his career included associations with Hayden, Stone & Co., the Federal Reserve Bank of San Francisco, Mitchum, Jones & Templeton, E. F. Hutton and William R. Staats & Co.

Mr. Schaefer served in both world wars and was a colonel in the U. S. Air Force Reserves at the time of his death.

He is survived by Mrs. Schaefer and a daughter.

Interlake Iron

DIVIDEND No. 70

Interlake Iron Corporation, Cleveland, has declared a dividend of 40 cents per share on its common stock, payable Dec. 15, 1961, to stockholders of record at the close of business Dec. 1, 1961.

Maker of Iron and Ferroalloys

This **BOOK** Will Make You **THINK TWICE** About:

- *Whether you are using the most accurate yardstick for comparing price/earnings ratios and yields.*
- *Whether there can be a major bull market and a bear market simultaneously.*
- *Whether you can use an all-inclusive stock average as an economic forecaster.*

As a professional, you have probably been disturbed by the frequent contradictions of the popular timing theories. This lack of agreement has been especially noticeable at important turning points. Why this confusion? Because these theories are all based on the same specious premise:

That all equities are part of the same single stock market which moves as a unit.

This premise is carefully analyzed and its shortcomings carefully documented in a new book, "**Investment Profits Through Market Timing — A Professional Approach**" by Kenneth B. Smilen and Kenneth Safian. As an alternative to this premise, this text introduces to the investment community **The Dual Market Principle,** a fresh insight into the nature of market timing. Here, stocks are classified according to the factors which determine earnings, rather than merely by their industry. This approach sets up three principal classifications:

a) *The Cyclical Market* made up of companies whose earnings are particularly sensitive to the movements of the economy;

b) *The Defensive-Growth Market* comprising companies whose secular earnings trend is upward; and

c) *Satellite Markets* consisting of firms whose fortunes are tied to the vagaries of government policy and/or international events, i.e. aircrafts.

This book presents a parallel critique of The Dow Theory, Barron's Confidence Index, The Odd-Lot Theory and The Dual Market Principle.

•

As a serious student of the stock market, you should be intrigued by the original thinking which characterizes this text. Price $7.50. For your copy, write or phone

Smilen & Safian, Incorporated

61 Broadway • New York 6, N. Y.

HA 2-4878

Letters . . .

(Editor's note: Because of the economic significance of the situation outlined, we're printing the entire text of a letter which Norvin R. Greene, of Lancaster & Norvin Greene —Investments— has written to President Kennedy).

Dear Mr. President:

The Treasury's recent action shortening Bulletin F depreciation—life for textile machinery—constitutes one of the most significantly constructive steps yet taken by your Administration.

The Albatross of Bulletin F has hung around the neck of the nation's progress since 1942 while Europe's production plant and equipment has been modernized through rapid-depreciation tax policies, much of ours has become more and more obsolete and non-competitive.

You are not the first President to recognize the problem but you are the first to take the bull by the horns and do something about it. Congressional action has never been required, only Presidential political courage.

Moving to improve the competitive position of our textile industry is a step in the right direction. I am sure you are well aware that it is only a first step, and not the most important step in changing Bulletin F's strangulating regulations.

Everyone ferverently hopes that military action will not be required to preserve our Western-World way of life. Should such engagement become necessary, it would find our nation's machine-tool inventory hopelessly obsolete.

Our defense industries still have pathetically few numerically-controlled machine tools, essential for modern weapon production. Our civilian industry's inventory of machine tools is more antiquated than that of industries engaged in defense. The machine tool industry is small, but constitutes the vital key both to quantity and quality production in war or peace.

Having taken the initial step, you will undertake, I believe, the next and more essential step, namely to reduce Bulletin F machine-tool life to not-more-than 10 years. The immediate loss to the Treasury will be small. In the longer run the Treasury revenue will be augmented.

And following this change there is badly needed a shortening of obsolete Bulletin F's specified life for other machinery and capital goods used in production.

You have my very great admiration for the action you have taken with regard to textile machinery depreciation. I am encouraged to think you will now take the other logical and vastly more important depreciation-policy changes to ensure that industry will build U. S. plant and equipment competitive with that of Europe and which can continue to surpass in quality and quantity the production of the Soviet Empire.

Norvin R. Greene

* * *

'Culture in Wall Street'

Editor:

I have just read your "'Humpty Dumpty' in Wall Street" editorial and chortled much. (That is Lewis Carroll's own word, chortle, as you know, and it stuck). . . . Market Letter Writers surely must have "Bartlett's Familiar Quotations" at hand, in whch to rummage about. . . . I'm afraid "getting culture" has struck the market place. Thank you for your editorial.

J. D. Barton
Montgomery, Alabama

CALIFORNIA-PACIFIC UTILITIES COMPANY

Quarterly dividends payable December 15 to shareholders of record December 1, have been declared at the following rates per share:

5% Preferred	25¢
5% Convertible Preferred .	25¢
5.40% Convertible Preferred	27¢
5½% Convertible Preferred	27½¢
Common	22½¢

D. J. Ley, VICE-PRES. & TREAS.

October 23, 1961

A

NATIONAL DISTILLERS and CHEMICAL CORPORATION

The Company with the Five Industry Future

DIVIDEND NOTICE

The Board of Directors has declared a quarterly dividend of 30¢ per share on the outstanding Common Stock, payable on December 1, 1961, to stockholders of record on November 10, 1961. The transfer books will not close.

PAUL C. JAMESON
October 26, 1961. *Treasurer*

LIQUORS • CHEMICALS
PLASTICS • FERTILIZERS
METALS

FEDERAL

FEDERAL PAPER BOARD CO., Inc.

Common & Preferred Dividends:

The Board of Directors of Federal Paper Board Company, Inc. has this day declared the following quarterly dividends:

50¢ per share on Common Stock.
28¾¢ per share on the 4.6% Cumulative Preferred Stock.

Common Stock dividends are payable October 15, 1961 to stockholders of record at the close of business October 2, 1961.

Dividends on the 4.6% Cumulative $25 par value Preferred Stock are payable December 15, 1961 to stockholders of record November 29, 1961.

ROBERT A. WALLACE
Vice President and Secretary

September 20, 1961
Bogota, New Jersey

AIR REDUCTION
Company, Incorporated

AIRCO 178th CONSECUTIVE COMMON STOCK DIVIDEND

The Board of Directors has declared a regular quarterly dividend of 62½¢ per share on the Common Stock of the Company, payable on December 5, 1961, to holders of record on November 18, 1961.

October 25, 1961.

T. S. O'BRIEN, *Secretary*

GOOD YEAR

The Board of Directors today declared the following dividends:

COMMON DIVIDEND No. 114

22½ cents per share on the Common Stock, payable December 15, 1961 to stockholders of record at the close of business November 15, 1961.

STOCK DIVIDEND

a 2 per cent common stock dividend, payable in common stock December 19, 1961 to stockholders of record at the close of business November 15, 1961.

The Goodyear Tire & Rubber Co.
By R. L. Miller,
Secretary

November 1, 1961

THE GREATEST NAME IN RUBBER

FIFTEEN YEARS AGO IN THE JOURNAL

(Editor's note: In view of the vast strides made in the frozen food industry, the following observations should be of particular interest).

I believe I can safely say that the retail food store industry believes, from a merchandising standpoint, that refrigerated produce is the most important trend in the industry, not excluding frozen foods, because of the basic competitive economics involved. To put it another way, refrigerated fresh produce is a "must" and frozen foods in the near future a "maybe."

Now, from what I have just said, some of you gentlemen may erroneously conclude that I don't believe in the future of frozen foods. Nothing could be further from the truth. However, I do not believe that any analysis of the facts will support the belief that some of the statements I have read, written by self-styled experts, are sound. I do not believe that 65% of all perishables will be sold within five years in frozen form—while I do not believe that 20 billion pounds of frozen foods a year, based on the present population, as predicted by F. L. Thompson of the Department of Agriculture, is "conservative" in spite of its source being a government economist.

I have seen too many other government economists' figures as to industry's ability to increase wages but not prices, etc., to accept them in preference to cold facts. But one part with which I wholeheartedly agreed was the statement, "It will require a good many years to provide the necessary processing equipment, properly located storage facilities, retail store equipment and other conditions which must be present before frozen foods can take their rightful place in the over-all food marketing picture."

It is just as well for all of us who are interested in seeing the frozen food industry grow that there are present certain factors which prevent it growing overnight to its full future size, because even were those factors not present, we would still have to overcome too quickly the slow movement of the great food industry, and the resistance to change in buying habits of the American housewife who is quick to try something new—but to make a habit of that new thing takes time.

Some of the items such as processing equipment, storage facilities, and retail storage equipment have been mentioned among the things ultimately required for the full development of frozen foods, but let us not overlook two important other items. One is the required low temperature transportation facilities, both rail and truck, because ordinary so-called refrigerated railroad cars and trucks are not usable for the lower temperatures required: they are normally designed only for "fresh food" temperatures. This requirement alone, I think you can readily see, is a very great one, and not one to be answered overnight. The last, and most important, fact to be considered is economics.

—W. B. McMillan

BOSTON EDISON COMPANY

Preferred Dividend

A quarterly dividend of $1.07 per share has been declared payable on the first day of November 1961 to stockholders of record at the close of business on October 10, 1961 of the Company's Cumulative Preferred Stock, 4.25% Series.

Preferred Dividend

A quarterly dividend of $1.20 per share has been declared payable on the first day of November 1961 to stockholders of record at the close of business on October 10, 1961 of the Company's Cumulative Preferred Stock, 4.78% Series.

Common Dividend No. 290

A quarterly dividend of 75 cents per share on the Common Stock of the Company has been declared payable on the first day of November 1961 to stockholders of record at the close of business on October 10, 1961.

Checks will be mailed from Old Colony Trust Company, Boston.

ALBERT C. McMENIMEN
Treasurer

Boston, September 25, 1961

DIAMOND NATIONAL CORPORATION

80th CONSECUTIVE YEAR OF DIVIDENDS

The Board of Directors of Diamond National Corporation on September 28, 1961, declared a quarterly dividend of 37½c per share on the $1.50 Cumulative Preferred Stock. At the same meeting the Board also declared a quarterly dividend of 40c per share on the Common Stock. Both dividends are payable November 1, 1961 to shareowners of record October 9, 1961.

HENRY A. BUTTFIELD
Secretary

PULP PRODUCTS · PACKAGING & ADVERTISING MATERIALS · LUMBER · MATCHES · WOODENWARE

THE DAYTON POWER AND LIGHT COMPANY
DAYTON, OHIO

157th Common Dividend

The Board of Directors has declared a regular quarterly dividend of 22c per share on the Common Stock of the Company, payable on December 1, 1961, to stockholders of record at the close of business on November 13, 1961.

GEORGE SELLERS, Secretary

November 3, 1961

FLINTKOTE® *Diversified Products For Home and Industry*

THE FLINTKOTE COMPANY
NEW YORK 20, N. Y.

quarterly dividends have been declared as follows:

Common Stock*: $.20 per share
$4 Cumulative Preferred Stock: $1 per share
$4.50 Series A Convertible 2nd Preferred Stock: $1.12½ per share
$2.25 Series B Convertible 2nd Preferred Stock: $.56¼ per share

These dividends are payable December 15, 1961 to stockholders of record at the close of business November 17, 1961.

*133rd consecutive dividend

JAMES E. McCAULEY, *Treasurer*
November 1, 1961

Report from North American Aviation, Inc.

What is a key policy at North American Aviation that has led to a sound 400% increase in sales in the past 10 years?

In 1951 North American Aviation was a leading manufacturer of aircraft, with net sales totaling $177,675,354. Last year, sales at North American exceeded $964,000,000. This is an increase of over 400% in the past 10 years—an increase that is attributable to a key policy. That policy: diversification.

During the past decade, North American has made a steady transition within the company into technologies that give greatest promise for the future while maintaining its leadership in advanced aircraft with the Mach 3 B-70 program. Today, NAA is deeply involved in electronics, space, nuclear power, rocket engines, and advanced aerospace vehicles. Over half of the company's sales now come from non-aircraft products. In many of these new fields, NAA is already a recognized leader, making such outstanding achievements as the following:

(1) INERTIAL NAVIGATION. First operational navigation system to guide America's nuclear-powered Polaris submarines was produced by NAA's Autonetics Division. Autonetics' systems are also used in the Minuteman and other missiles, and in aircraft such as the Lockheed F-104.

(2) ROCKET PROPULSION. Rocketdyne Division produced the rocket engines that have launched more than 300 of America's major missile and space flights.

(3) MACH 3 FLIGHT. The B-70 Valkyrie, the Free World's first Mach 3 (2000-mph) jet airplane, is now being built at the Los Angeles Division.

(4) NUCLEAR POWER. Snap 2, a compact nuclear reactor for producing electricity in space vehicles, was developed by Atomics International Division.

(5) SPACE EXPLORATION. The Space and Information Systems Division is developing the upper stage for the advanced Saturn launch vehicle which will perform both manned and unmanned space missions.

(6) ELECTRONIC COMPUTERS. Autonetics' Recomp II was the first all-transistorized compact digital computer built for industrial and scientific use.

(7) AEROSPACE FLIGHT. Rocket-powered X-15, built by Los Angeles Division, will take man on the highest (50 miles) and fastest (4000-mph) controlled flights he has ever made.

With this broad base of diversified activities, North American Aviation is well prepared to meet the challenges of the rapidly developing space age.

NORTH AMERICAN AVIATION
DIVISIONS: ATOMICS INTERNATIONAL, AUTONETICS, COLUMBUS, LOS ANGELES, ROCKETDYNE, SPACE & INFORMATION SYSTEMS

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COMMON STOCK DIVIDEND

The Board of Directors of Central and South West Corporation at its meeting held on October 12, 1961, declared a regular quarterly dividend of twenty-five and one-half cents (25½c) per share on the Corporation's Common Stock. This dividend is payable November 30, 1961, to stockholders of record October 31, 1961.

LEROY J. SCHEUERMAN
Secretary

CENTRAL AND SOUTH WEST CORPORATION
Wilmington, Delaware

Photo courtesy of Raven Industries and U.S. Navy

LP-Gas is such a versatile fuel that new uses for it arise regularly—such as heating air for the experimental Navy balloon above. It is already high in demand for cooking, heating, air conditioning and scores of other home and commercial uses. Small wonder that among petroleum products, LP-Gas boasts one of the best sales surges—7 per cent last year alone.

Most LP-Gas is produced by wringing out natural gas before it passes into transmission lines. Sinclair Oil & Gas Company owns fully, or in part, 38 gas products plants which process its natural gas output to recover the valuable LP-Gas. It markets the fuel under the Sinclair "Truflame" trademark through distributors in 38 states, and last year rang up a *sales gain double that of the industry.*

As its natural gas output rises, Sinclair is adding gas processing capacity and extending LP-Gas distribution. By expanding its endeavors in growing markets, *Sinclair concentrates on more sales of the most profitable products.*

ASTM—Sinclair salutes the American Society for Testing and Materials. Founded in 1898, ASTM promotes research to develop specifications and test methods which aid all industries in maintaining product quality. The scientific work of its 10,000 members is multiplied many-fold to benefit all consumers. Its D-2 committee, which deals with petroleum products, recently completed specifications for LP-Gas which recognize this fuel's expanding uses.

Sinclair

SINCLAIR OIL CORPORATION • 600 FIFTH AVENUE • NEW YORK 20, N. Y.

Memo to UNITED GAS CORP. Shareholders from J. H. Miracle, Vice Pres. and Treasurer

REPORT ON FINANCIAL POSITION

A good financial structure is so important to profitable long-range operations that our shareholders will be interested in the following information.

Construction of new facilities this year will cost about $86,000,000. To help finance this construction program we obtained $40,000,000 in bank loans in July, and at September 30 average interest on long-term debt was 4.04%.

At September 30, 1961, shareholder equity represented 42% of United Gas Corporation's consolidated capitalization of $725,000,000.

We consider this a healthy financial position. It has resulted from careful, long-range planning by the management of the world's largest handler of natural gas.

UNITED GAS
CORPORATION
SERVING THE GULF SOUTH
Headquarters, Shreveport, La.

WORLD'S LARGEST HANDLER OF NATURAL GAS